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# COLOR TV

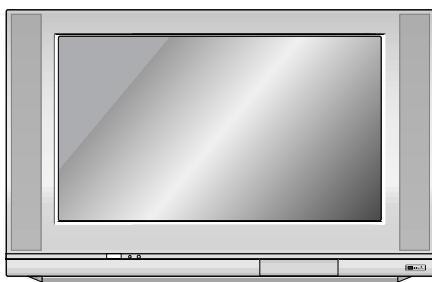
# SERVICE MANUAL

CHASSIS : MC-036A

**MODEL:RT-32FZ30RB**

## CAUTION

BEFORE SERVICING THE CHASSIS,  
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



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# SAFETY PRECAUTIONS

## IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by  $\Delta$  in the Schematic Diagram and Replacement Parts List.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

### General Guidance

An **isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Due to high vacuum and large surface area of picture tube, extreme care should be used in **handling the Picture Tube**. Do not lift the Picture tube by its Neck.

### X-RAY Radiation

#### Warning:

The source of X-RAY RADIATION in this TV receiver is the High Voltage Section and the Picture Tube. For continued X-RAY RADIATION protection, the replacement tube must be the same type tube as specified in the Replacement Parts List.

To determine the presence of high voltage, use an accurate high impedance HV meter.

Adjust brightness, color, contrast controls to minimum.

Measure the high voltage.

The meter reading should indicate

23.5  $\pm$  1.5KV: 14-19 inch, 26  $\pm$  1.5KV: 19-21 inch,

29.0  $\pm$  1.5KV: 25-29 inch, 30.0  $\pm$  1.5KV: 32 inch

If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.

### Before returning the receiver to the customer,

always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

#### Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1M $\Omega$  and 5.2M $\Omega$ .

When the exposed metal has no return path to the chassis the reading must be infinite.

An other abnormality exists that must be corrected before the receiver is returned to the customer.

#### Leakage Current Hot Check (See below Figure)

Plug the AC cord directly into the AC outlet.

**Do not use a line Isolation Transformer during this check.**

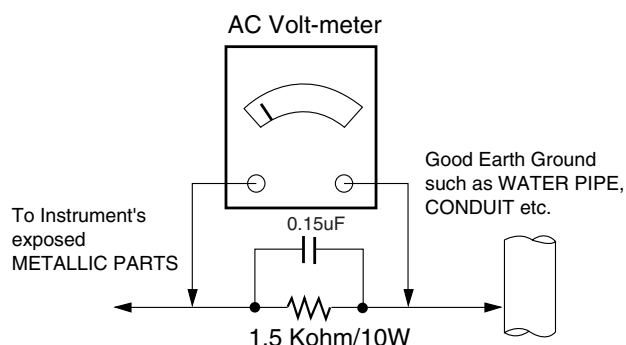
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which is corresponds to 0.5mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

#### Leakage Current Hot Check circuit



# SERVICING PRECAUTIONS

**CAUTION:** Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the **SAFETY PRECAUTIONS** on page 3 of this publication.

**NOTE:** If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

## General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
  - a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
  - b. Disconnecting or re-connecting any receiver electrical plug or other electrical connection.
  - c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.

**CAUTION:** A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

- d. Discharging the picture tube anode.
2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe. Do not test high voltage by "drawing an arc".
  3. Discharge the picture tube anode only by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube anode button, using an insulating handle to avoid personal contact with high voltage.
  4. Do not spray chemicals on or near this receiver or any of its assemblies.
  5. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable non-abrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)

**CAUTION:** This is a flammable mixture.

Unless specified otherwise in this service manual, lubrication of contacts is not required.

6. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
7. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
8. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.  
Always remove the test receiver ground lead last.
9. *Use with this receiver only the test fixtures specified in this service manual.*

**CAUTION:** Do not connect the test fixture ground strap to any heatsink in this receiver.

## Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called *Electrostatically Sensitive (ES) Devices*. Examples of typical ES devices are integrated circuits and some field-effect

transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

**CAUTION:** Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

## General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range of 500°F to 600°F.
  2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
  3. Keep the soldering iron tip clean and well tinned.
  4. Thoroughly clean the surfaces to be soldered. Use a mall wirebrush (0.5 inch, or 1.25cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
  5. Use the following unsoldering technique
    - a. Allow the soldering iron tip to reach normal temperature. (500°F to 600°F)
    - b. Heat the component lead until the solder melts.
    - c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.
- CAUTION:** Work quickly to avoid overheating the circuit-board printed foil.
6. Use the following soldering technique
    - a. Allow the soldering iron tip to reach a normal temperature (500°F to 600°F)
    - b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.



- c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.

**CAUTION:** Work quickly to avoid overheating the circuit board printed foil.

- d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

### IC Remove/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

#### Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

#### Replacement

1. Carefully insert the replacement IC in the circuit board.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to the areas).

### "Small-Signal" Discrete Transistor

#### Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

### Power Output, Transistor Device

#### Removal/Replacement

1. Heat and remove all solder from around the transistor leads.
2. Remove the heatsink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heatsink.

### Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendicular y to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

### Fuse and Conventional Resistor

#### Removal/Replacement

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.
3. Solder the connections.

**CAUTION:** Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

### Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

#### At IC Connections

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

#### At Other Connections

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.

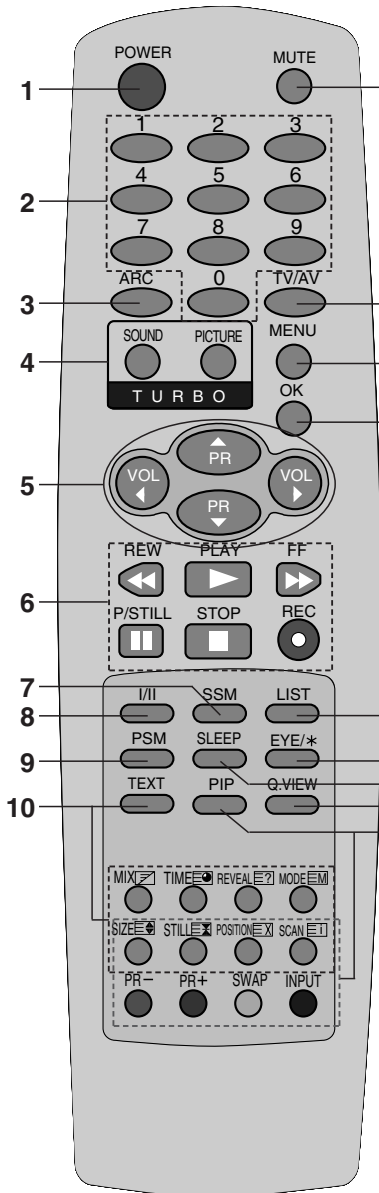
**CAUTION:** Be sure the insulated jumper wire is dressed so the it does not touch components or sharp edges.

# DESCRIPTION OF CONTROLS

All the functions can be controlled with the remote control handset. Some functions can also be adjusted with the buttons on the front panel of the set.

## Remote control handset

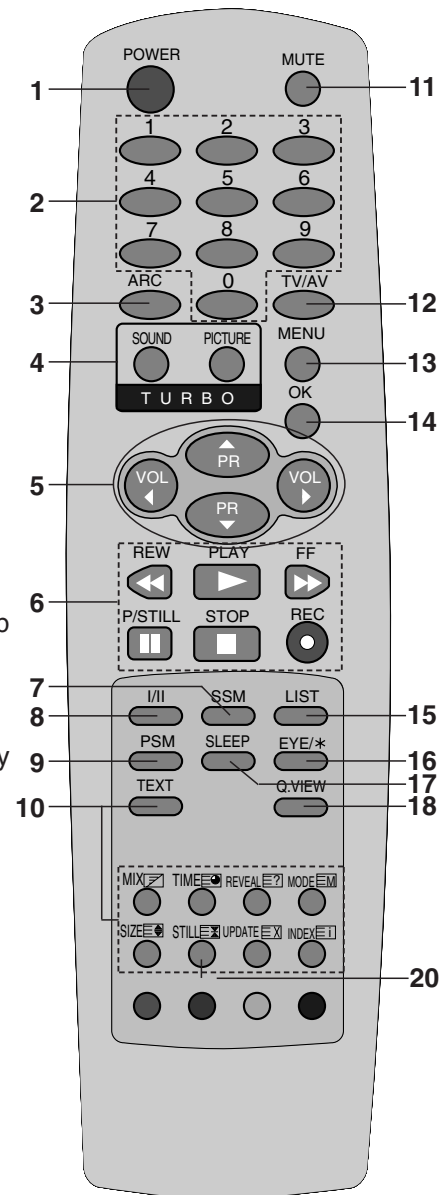
Before you use the remote control handset, please install the batteries. See the next page.



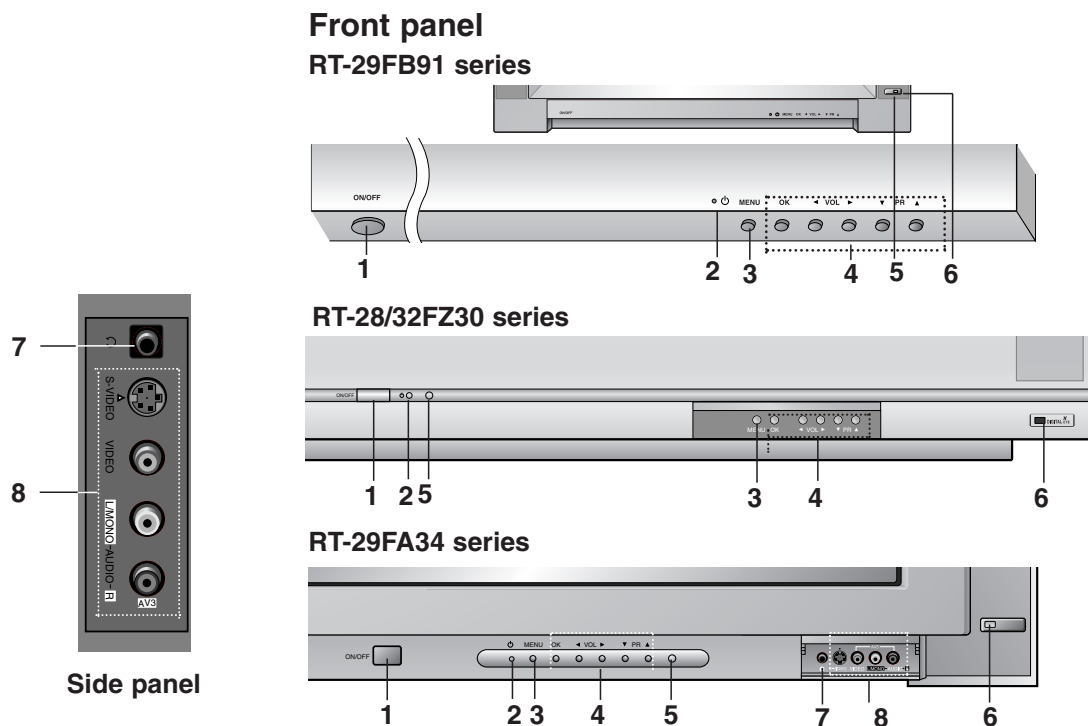
(With PIP)

1. **POWER**  
switches the set on from standby or off to standby.
2. **NUMBER BUTTONS**  
switches the set on from standby or directly select a number.
3. **ARC (Aspect Ratio Control)**  
changes the picture format.
4. **TURBO SOUND BUTTON**  
selects Turbo sound.
12. **TV/AV**  
selects TV or AV mode.  
switches the set on from standby.
13. **MENU**  
selects a menu.
14. **OK**  
accepts your selection or displays the current mode.
13. **TURBO PICTURE BUTTON**  
selects Turbo picture.
5. **▲ / ▼ (Programme Up/Down)**  
selects a programme or a menu item.  
switches the set on from standby.
6. **VCR BUTTONS**  
control a LG video cassette recorder.
7. **SSM (Sound Status Memory)**  
recalls your preferred sound setting.
8. **I/I**  
selects the language during dual language broadcast.
9. **PSM (Picture Status Memory)**  
recalls your preferred picture setting.
10. **TELETEXT BUTTONS (option)**  
These buttons are used for teletext.  
For further details, see the 'Teletext' section.
11. **MUTE**  
switches the sound on or off.
12. **TV/AV**  
selects TV or AV mode.  
switches the set on from standby.
13. **MENU**  
selects a menu.
14. **OK**  
accepts your selection or displays the current mode.

- 15. LIST**  
displays the programme table.
- 16. EYE/\* (option)**  
switches the eye function on or off.
- 17. SLEEP**  
sets the sleep timer.
- 18. Q.VIEW**  
returns to the previously viewed programme.  
selects a favourite programme.
- 19. PIP BUTTONS (option)**  
**PIP**  
switches the sub picture on or off.  
**PR +/-**  
selects a programme for the sub picture.  
**SWAP**  
alternates between main and sub picture.  
**INPUT**  
selects the input mode for the sub picture.  
**SIZE**  
adjusts the sub picture size.  
**STILL**  
freezes motion of the sub picture.  
**POSITION**  
relocates the sub picture in clockwise direction.  
**SCAN**  
switches on or off the programme scan mode through 12 sub pictures.
- 20. STILL**  
freezes motion of the picture.
- COLOURED BUTTONS :** These buttons are used for teletext (only TELETEXT models) or programme edit.



(Without PIP)



- 1. MAIN POWER (ON/OFF)**  
switches the set on or off.
- 2. POWER/STANDBY INDICATOR**  
illuminates brightly when the set is in standby mode.  
dims when the set is switched on.
- 3. MENU**  
selects a menu.
- 4. OK**  
accepts your selection or displays the current mode.  
◀ / ▶ (Volume Down/Up)  
adjusts the volume.  
adjusts menu settings.  
▲ / ▼ (Programme Up/Down)  
selects a programme or a menu item.  
switches the set on from standby.
- 5. REMOTE CONTROL SENSOR**
- 6. EYE (option)**  
adjusts picture according to the surrounding conditions.
- 7. HEADPHONE SOCKET (option)**  
Connect the headphone plug to this socket.
- 8. AUDIO/VIDEO IN SOCKETS (AV3)**  
Connect the audio/video out sockets of external equipment to these sockets.  
**S-VIDEO/AUDIO IN SOCKETS (S-AV)**  
Connect the video out socket of an S-VIDEO VCR to the **S-VIDEO** socket.  
Connect the audio out sockets of the S-VIDEO VCR to the audio sockets as in **AV3**.

# SPECIFICATION

**NOTE :** Specifications and others are subject to change without notice for improvement.

## ■ Scope

This specification can be applied to all the television related to MC-036A Chassis.

## ■ Test and Inspection Method

- 1) performance: Follow the Standard of LG TV test
- 2) Standards of Etc requirement
  - Compliance
  - Safety: IEC60065
  - EMC: EN55020, EN55013

## ■ Test Condition

- 1) Temperature :  $20 \pm 5^{\circ}\text{C}$
- 2) Relative Humidity:  $65 \pm 10\%$
- 3) Use the parts only designated in B.O.M., PARTS SPEC., or drawings.
- 4) Follow each drawing or spec for spec and performance of parts, based upon P/N of B.O.M
- 5) Warm up TV set for more than 20min. before the measurement.

## ■ General Specification

| No | Item                  | Specification   | Remark           |
|----|-----------------------|---|------------------|
| 1  | Receiving System      | PAL, SECAM-BG<br>PAL/SECAM DK, PAL I/I<br>SECAM-L/L'<br>NTSC M            | OPTION<br>NON EU |
| 2  | AV Receiving System   | 1) NTSC M<br>2) PAL<br>3) SECAM   |                  |
| 3  | Available Channel     | 1) VHF: E2~E12<br>2) UHF: E21~E69<br>3) CATV: S1~S20<br>4) HYPER: S21~S41 |                  |
| 4  | Input Voltage         | 110-240V~, 50/60 Hz   | NON EU           |
| 5  | Market                | MIDDLE EAST, AFRICA   |                  |
| 6  | Screen Size           | Flat 29", Wide 28" / 32"  | Flat / Wide      |
| 7  | Tuning System         | FVS 100Program  |                  |
| 8  | Operating Environment | 1) Temp : 0 ~ 40 deg<br>2) Humidity: 85% under                            |                  |
| 9  | Storage Environment   | 1) Temp : -20 ~ 60 deg<br>2) Humidity: 85% under                          |                  |

■ **Feature and Function**

| No | Item                                   | Specification         | Remark                                  |
|----|--|-----------------------|---|
| 1  | Teletext                               | TOP, FLOF, LIST 8page | Option                                  |
| 2  | Remocon                                | NEC code              |   |
| 3  | AV input                               | 3                     | Side or, Front: 1, Rear: 2              |
| 4  | Component input                        | 480I                  | Option(RT- MODEL)                       |
| 5  | PERI TV connector                      | Full SCART:1          | AV1                                     |
| 6  | RGB input                              | 1                     | AV1                                     |
| 7  | 2 Carrier stereo                       | BG,DK                 |   |
| 8  | NICAM stereo                           | BG,I                  |   |
| 9  | 2 Carrier Dual                         | BG,DK                 |   |
| 10 | NICAM Dual                             | BG,I                  |   |
| 11 | SSC(Split Screen) mode                 | X                     |   |
| 12 | Multi picture display mode(1,2,12 PIP) | PAL, BG,I, DK, M      | Option(RT- MODEL)                       |
| 13 | Film mode                              | X                     |   |
| 14 | Noise reduction                        | X                     |   |
| 15 | Progressive scan                       | X                     |   |
| 16 | Motion detection                       | X                     |   |
| 17 | DBS                                    | O                     |   |
| 18 | Swivel speaker                         | X                     |   |
| 19 | Digital eye                            | O                     | Max.: PSM (Dynamic)<br>Min.: PSM (Mild) |

# ADJUSTMENT INSTRUCTION

## 1. Application Object

These instructions are applied to all of the color TV, MC-036A.

## 2. Notes

- (1) Because this is not a hot chassis, it is not necessary to use an isolation transformer. However, the use of isolation transformer will help protect test instrument.
- (2) Adjustment must be done in the correct order. But the adjustment can be changed by consideration of mass production.
- (3) The adjustment must be performed in the circumstance of  $25\pm 5^{\circ}\text{C}$  of temperature and  $65\pm 10\%$  of relative humidity if there is no specific designation.
- (4) The input AC voltage of the receiver must keep  $220\text{V}\pm 10\%$  in adjusting.
- (5) The receiver must be operated for about 15 minutes prior to the adjustment.

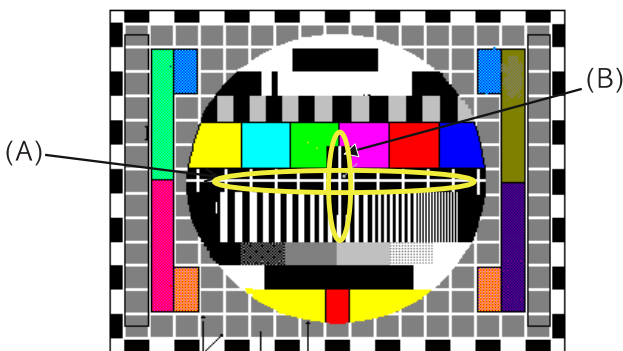
## 3. Focus adjustment

### 3-1. Preliminary steps

- (1) Tune the TV set to receive a digital pattern.  
(SVC mode: Automatically mode change the STANDARD MODE)

### 3-2. Adjustment

- (1) Adjust center focus volume of FBT for the best focus of vertical line (B).
- (2) Adjust the upper focus volume of FBT for the best focus of area (A).
- (3) Repeat above step 1) and 2) for the best overall focus.



## 4. Purity & Convergence adjustment

### 4-1. Color purity adjustment

- (1) Magnetic room set to destination magnetic and horizontal magnetic set to zero.
- (2) It makes CPT or CABINET enough to demagnetization.

- (3) Self-adjustment: Adjust by input of Green raster signal  
Manual-adjustment: Receive the signal of red raster.  
(RF: PG50Ch or A/V input: RED pattern)
- (4) Loosen fixed screw of DY and closely to CPT funnel part.
- (5) Check the center of screen that purity magnet of CPT by crossing adjustment. At this time, 4 & 6 pole magnet is located to magnet of nothing.
- (6) Move the DY to make equal red on whole screen and it does not to make the DY by fixed screw after check a simple color of Red/Green/Blue and white raster whether or not it is a pollution of color.  
(At this time, take care raster of screen and DY must fixing in the condition which maintains a horizontality.)
- (7) Check the TV set by move direction.

### 4-2. Convergence adjustment

These adjustments can the best condition of focus after finished purity adjustment.

- (1) Receive the signal of cross hatch that color is black.
- (2) Adjust brightness and luminosity till dot appear 9 ~12.
- (3) Open angle of the two tab of 4 pole magnet by isogonic angle and accord with vertical line of red and blue color in the middle of screen.
- (4) Maintain as angle of 3) and rotate the tab to accord with vertical line of Red and Blue color in the middle of screen.
- (5) Open angle of the two tab of 6 pole magnet by isogonic angle and accord with vertical line of Red/Blue and Green.
- (6) Maintain as angle of 5) and rotate the tab to accord with horizontal line. In case of twisted horizontal line, repeat adjustment of 3) ~ 5) remembering the movement of Red/Green/Blue color.
- (7) Move the DY to best condition of convergence and attach the CPT to a rubber-check for fixed DY.

### 4-3 Screen voltage adjustment

#### 1) Preliminary steps

- (1) Turn on the TV set.
- (2) This adjustment should be performed after warming up for more than 15 minutes.

#### 2) Adjustment

- (1) Adjust in RF non-signal.
- (2) Press the ADJ key of SVC remote controller to make horizontal line.

## 5. White balance adjustment

This adjustment should be performed after screen adjustment.  
This adjustment set the self-adjustment rule.

### 5-1. Test Equipment

- (1) Automatic White balance meter: Incase of self-adjustment
- (2) White balance meter(CRT Color Analyzer, CA-100): 1 EA
- (3) A SVC remote controller.

## 5-2. Preliminary steps

- (1) Tune the TV set to receive an 100% white pattern.
- (2) This adjustment should be performed after screen voltage adjustment.

- g.Repeat adjusting until the color coordinate of High and Low Light is satisfied.
- h.Check the color coordinate of adjusted condition with white balance meter.

## 5-3. Adjustment

- (1) Press the CH ▲,▼ key to select adjustment item.
- (2) Press the VOL ◀,▶ key to change data.
- (3) Adjustment preliminary steps.
  - a.In items of picture adjustment,adjust until "CONTRAST" and "BRIGHT" become 45 Ft\_L(153Cd/m²).
  - b. Press the SVC key to enter adjustment mode.
  - c. Adjust the Y value of High Light with R-DRIVE and adjust the X value with B-DRIVE until they have the color coordinate of High Light as below.
  - d. In items of picture adjustment,adjust until "CONTRAST" and "BRIGHT" become 4.5 Ft\_L(15.4FT-L).
  - e. Enter the adjustment mode by pressing the SVC key.
  - f. Adjust the Y value of Low Light with R-CUTOFF and adjust the X value with B-CUTOFF until they have the color coordinate of Low Light as below.

| Color temperature. | X coordinate | Y coordinate | Remark               |
|--------------------|--------------|--------------|----------------------|
| 13000K             | 266 ± 8      | 273 ± 8      | Non EU(except model) |
| 9000K              | 288 ±8       | 295 ± 8      | EU (RE,RL model)     |

|          | Item             | PH 32" FLAT | SS 29" FLAT | SS 28" FLAT | Remark                |
|----------|------------------|-------------|-------------|-------------|-----------------------|
| SERVICE1 | CR(0~511)        | 256         | 256         | 256         | LOW LIGHT adjustment  |
|          | CG(0~511)        | 256         | 256         | 256         | LOW LIGHT adjustment  |
|          | CB(0~511)        | 256         | 256         | 256         | LOW LIGHT adjustment  |
|          | WR(0~511)        | 256         | 256         | 256         | HIGH LIGHT adjustment |
|          | WG(0~511)        | 256         | 256         | 256         | HIGH LIGHT adjustment |
|          | WB(0~511)        | 256         | 256         | 256         | HIGH LIGHT adjustment |
|          | SBRI(-255 ~ 254) | 20          | 20          | 20          | SUB BRIGHT adjustment |
|          | YCDEL            | -2          | -2          | -2          |                       |

### IIC DATA SETTING

|            | R AMP | R CUT | B AMP | B CUT | SUB BRIGHT | DATA SAVE |
|------------|-------|-------|-------|-------|------------|-----------|
| OFFSE DATA | 0     | 3     | 1     | 2     |            |           |
| IIC WRITE  |       |       |       |       |            |           |
| SUB ADD    | 1C8   | 1C3   | 1CA   | 1C5   |            |           |
| START BIT  | 8     | 8     | 8     | 8     |            |           |
| STOP BIT   | 0     | 0     | 0     | 0     |            |           |
| EEPROM     |       |       |       |       |            |           |
| SUB ADD    | 30,31 | 2A,2B | 34,35 | 2E,2F |            |           |

| SLAVE ADDRESS(WRITE) | SUB BRIGHT CONTROL DATA | SPEED |
|----------------------|-------------------------|-------|
| IC 8A EEPROM A0      |                         | 2     |



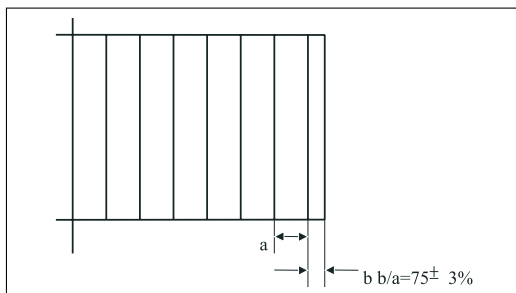
## 6. Deflection & POP position setting data adjustment.

### 6.1 Adjustment preparation

- (1) Deflection setting data adjustment is operate by SVC communicator.
- (2) Enter the adjustment mode by pressing SVC key.
- (3) Enter the deflection mode by pressing ADJUST key.
- (4) Use the CH  $\blacktriangle$ ,  $\blacktriangledown$  key to select adjustment item.
- (5) Use the VOL  $\blacktriangleleft$ ,  $\blacktriangleright$  key to increase/decrease data.
- (6) Tune the TV set to receive PAL-B/G Digital pattern.

### 6.2 Adjustment

- (1) VL (Vertical Linearity) adjustment:  
Adjust the top & bottom size of inner circle to be equal.
- (2) VA (Vertical Amplitude) adjustment:  
Adjust so that the circle of a digital circle pattern should be located interval of 6~7mm from the effective screen of the CPT.
- (3) SC (Vertical S correction) adjustment:  
Adjust so that all distance between each lattice width of top/center/bottom are to be the same.
- (4) VS (Vertical Shift) adjustment:  
Adjust so that the geometric vertical center line is in accord with vertical center line of CPT.
- (5) HS (Horizontal Shift) adjustment:  
Adjust so that the geometric horizontal center line is in accord with horizontal center line of CPT.
- (6) EW (East-West Width) adjustment:  
Adjust until the outmost left and right lattice of received pattern is accord with 75% of other lattice width.

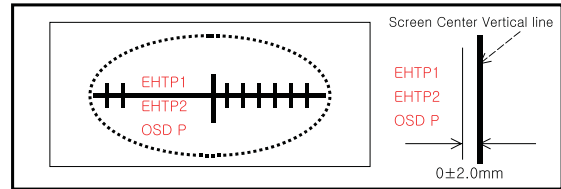


- (7) ET (East-West Trapezium) adjustment:  
Adjust to make the length of top horizontal line same with it of the bottom of horizontal line.
- (8) EP (East-West Parabola) adjustment:  
Adjust so that middle portion of the outermost left and right vertical line look like parallel with vertical lines of the CPT.
- (9) CRNU (Upper Corner Correction) adjustment:  
After finished EP adjustment, adjust vertical line of left-top, right-top of screen to the best straight line.
- (10) CRNL (Lower Corner Correction) adjustment:  
After finished EP adjustment, adjust vertical line of left-bottom, right-bottom of screen to the best straight line.
- (11) BOW adjustment  
A standard is not changing the default value.
- (12) Angle adjustment.  
When you adjust the angle, adjust correctly raster of left/right screen.
- (13) CRNU6 (6' th Order Upper Corner Correction) adjustment  
After finished EP adjustment, adjust vertical line of left-top, right-top of screen to the best straight line.
- (14) CRNL6 (Lower Corner Correction) adjustment:  
After finished EP adjustment, adjust vertical line of left-

bottom, right-bottom of screen to the best straight line.

- (15) OSD P (OSD POSITION) adjustment.

Adjust so that the character "2" of "EHTP2" is in accord with right of Screen Center Vertical line after finished (1)~ (14) adjustment. ( Refer to <figure.1> and <figure.2>.)



<figure.1>



<figure.2>

#### SERVICE 2 standard DATA

| Item  | Variable range | PHILIPS 32" FLAT | S/S 29" FLAT | S/S 28" FLAT |
|-------|----------------|------------------|--------------|--------------|
| VL    | -128~127       | 0                | 0            | 0            |
| VA    | -128~127       | 10               | 19           | 49           |
| SC    | -128~127       | 20               | 30           | 20           |
| VS    | -256~255       | 0                | 5            | 0            |
| HS    | -512~511       | -152             | -198         | -180         |
| EW    | -256~255       | 5                | -13          | 0            |
| ET    | -128~127       | 0                | 0            | 0            |
| EP    | -256~255       | 234              | 228          | 239          |
| CRNU  | -128~127       | 4                | 6            | 2            |
| CRNL  | -128~127       | 5                | 6            | 3            |
| BOW   | -512~511       | 2                | 0            | 0            |
| ANGLE | -512~511       | 1                | 0            | 0            |
| CRNU6 | -128~127       | -1               | -1           | -1           |
| CRNL6 | -128~127       | -1               | -1           | -1           |
| EHTTH | 0~2047         | 250              | 250          | 250          |
| EHT   | 0~511          | 60               | 60           | 60           |
| EHTV1 | -512~511       | -61              | -61          | -61          |
| EHTV2 | -512~511       | -20              | -20          | -20          |
| EHTH1 | -512~511       | -97              | -97          | -97          |
| EHTH2 | -512~511       | -22              | -22          | -22          |
| EHT F | 0~511          | 0                | 0            | 0            |
| EHTP1 | -511~512       | -20              | -20          | -20          |
| EHTP2 | -511~512       | -40              | -40          | -40          |
| OSD P | -15~15         | 0                | 0            | 0            |

### SERVICE 3 standard DATA

| Item  | PHILIPS<br>32"FLAT | S/S<br>29" FLAT | S/S<br>28" FLAT |  |
|-------|--------------------|-----------------|-----------------|--|
| IBRM  | 413                | 413             | 413             |  |
| WDRM  | 128                | 128             | 128             |  |
| CGAIN | 50                 | 50              | 50              |  |
| WGAIN | 50                 | 50              | 50              |  |
| MWDR  | 496                | 496             | 496             |  |
| BCLTH | 85                 | 140             | 135             |  |
| BCLTC | 400                | 400             | 400             |  |
| BCLGA | 113                | 230             | 200             |  |
| BCLC  | 200                | 200             | 200             |  |
| SVDEL | 7                  | 5               | 5               |  |
| SVD   | 4                  | 4               | 4               |  |
| SVG   | 30                 | 30              | 20              |  |
| VBSO  | 23                 | 23              | 23              |  |
| TML   | 14                 | 15              | 14              |  |

### SERVICE 4 standard DATA

| Item   | PHILIPS<br>32"FLAT | S/S<br>29" FLAT | S/S<br>28" FLAT |  |
|--------|--------------------|-----------------|-----------------|--|
| FP     | 20                 | 20              | 20              |  |
| NP     | 83                 | 83              | 83              |  |
| SP     | 17                 | 17              | 17              |  |
| S1 VOL | 102                | 102             | 102             |  |
| S2 VOL | 102                | 102             | 102             |  |
| AGC-L  | 230                | 230             | 230             |  |
| VPC-L  | 0                  | 0               | 0               |  |
| M-STR  | 45                 | 45              | 45              |  |
| M-HMC  | 25                 | 25              | 25              |  |
| M-HP   | 9                  | 9               | 9               |  |
| M-LP   | 11                 | 11              | 11              |  |
| M-LIM  | 252                | 252             | 252             |  |

29" Model:

Adjustment must adjust to the N50Hz(Only PAL mode).  
W50Hz,N60Hz and W60Hz need not adjustments.(Only 29" model)

28"/32" WIDE Model:

14:9,4:3 MODE H-SH(H-SHIFT) adjustment addition.

Adjust "H-SHIFT" of 14:9 and 4:3 by 50Hz.

\* Caution: Adjustment of 50 Hz is 16:9's standard format.  
When the adjustment is 50Hz wide mode, you must be done re-check.

At this time, ZOOM1 and ZOOM2 Mode need not adjustments. Because it can automatically correct in 16:9 mode.

When you want to re-adjust after deflection adjustment, adjustment is finished after always re-adjustment.

### Screen OSD FONT status and adjustment in H-Shift ARC SVC adjustment.

| No. | ARC MODE | SVC OSD FONT(50Hz,PAL) | H-SHIFT      |
|-----|----------|------------------------|--------------|
| 1   | 16:9     | 50W                    | Adjustment   |
| 2   | 14:9     | 50 149                 | Adjustment   |
| 3   | ZOOM1    | 50 Z1                  | Adjustment X |
| 4   | ZOOM2    | 50 Z2                  | Adjustment X |
| 5   | 4:3      | 50 N                   | Adjustment   |

### Deflection adjustment standard DATA

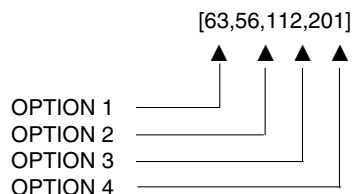
| Item  | Variable<br>range | PAL<br>100Hz | 480I |
|-------|-------------------|--------------|------|
| VL    | -128~127          | 0            | 0    |
| VA    | -128~127          | 10           | 10   |
| SC    | -128~127          | 20           | 20   |
| VS    | -256~255          | 0            | 0    |
| HS    | -512~511          | -152         | -152 |
| EW    | -256~255          | 5            | 5    |
| ET    | -128~127          | 0            | 0    |
| EP    | -256~255          | 234          | 234  |
| CRNU  | -128~127          | 4            | 4    |
| CRNL  | -128~127          | 5            | 5    |
| BOW   | -512~511          | 2            | 2    |
| ANGLE | -512~511          | 1            | 1    |
| CRNU6 | -128~127          | -1           | -1   |
| CRNL6 | -128~127          | -1           | -1   |
| PFGHE | 0~1024            | 0            | 0    |
| PFGHB | 0~1024            | 0            | 0    |
| EHTTH | 0~2047            | 250          | 250  |
| EHTS  | 0~511             | 60           | 60   |
| EHTV1 | -512~511          | -61          | -61  |
| EHTV2 | -512~511          | -20          | -20  |
| EHTH1 | -512~511          | -97          | -97  |
| EHTH2 | -512~511          | -22          | -22  |
| EHT F | 0~511             | 0            | 0    |
| EHTP1 | -511~512          | -20          | -20  |
| EHTP2 | -511~512          | -40          | -40  |
| OSD P | -15~15            | 0            | 0    |

Adjust in PAL100Hz and PAL50Hz,NTSC60Hz and 480I needed not adjustment.

## 7. OPTION Adjustment

### 7-1. Preparation for Adjustment

- 1) This option adjustment decides function in accordance with model.  
Press the SVC TX adjustment button(IN-START button) at SVC mode,then adjust the option at OPTION 1,2,3,4 mode.
- 2) Mark the option adjustment data like [111,11,111,11] in BOM.



#### • Mark of BOM

| LEVEL | PART NO.    | SPECIFICATION       | DESCRIPTION  |
|-------|-------------|---------------------|--------------|
| 1.    | 3141VMN382A | MAIN[63.56.112.201] | CHASSIS ASSY |

The OPTION 1 data is 113,OPTION 2 data is 63,the  
oOPTION 3 data is 112,the OPTION 4 data is 201 in this  
model.

### 7-2. Adjustment Method

- 1) Input data directly by the buttons corresponded with  
OPTION1 ??(0~63), OPTION2 ??(0~63), OPTION3  
??? (0~127).
- 2) Option4??? (0~116) controls corresponding lines directly  
relate with OSD and TXT LANG.
- 3) Select each OPTION function by the CH Up/Down button and  
then set up each OPTION by the VOL Up/Down button.

**Table.1 OPTION 1 Function**

| Option  | Code | Function                      | Remark               |
|---------|------|-------------------------------|----------------------|
| 200PR   | 0    | 100 PROGRAM SAVE              |                      |
|         | 1    | 200 PROGRAM SAVE              |                      |
| TSEAR   | 0    | WITHOUT TURBO SEARCH FUNCTION | WL/CL model          |
|         | 1    | WITH TURBO SEARCH FUNCTION    | CT/CE/WT/WE model    |
| I II SV | 0    | NO SAVE DUAL SOUND CONDITION  | EU(WE/WL/CE/C model) |
|         | 1    | SAVE DUAL SOUND CONDITION     | NON-EU (WT/CT model) |
| TOP     | 0    | FLOP TEXT                     | Without top text     |
|         | 1    | TOP TEXT                      |                      |
| EYE     | 0    | WITHOUT EYE                   |                      |
|         | 1    | WITH EYE                      |                      |
| A2 ST   | 0    | FM STEREO/DUAL NON ACTIVE     |                      |
|         | 1    | NICAM AND FM STEREO/DUAL      |                      |
| SYS     | 0    | BG/I/DK                       |                      |
|         | 1    | BG/L                          |                      |
|         | 2    | BG/I/DK/M                     |                      |
|         | 3    | RESERVED                      |                      |

**Table 2. OPTION 2 Function**

| Option | Code | Function                   | Remark    |
|--------|------|----------------------------|-----------|
| ACMS   | 0    | Without ACMS function      | Australia |
|        | 1    | With ACMS function         |           |
| VOL    | 0    | Normal volume curve        | EU        |
|        | 1    | Rushed volume curve        | NON EU    |
| HPHON  | 0    | Without headphone          |           |
|        | 1    | With headphone             |           |
| DVD    | 0    | Without DVD input          |           |
|        | 1    | With DVD input             |           |
| SAV3   | 0    | AV3 Y&C not coresspondence |           |
|        | 1    | AV3 Y&C coresspondence     |           |
| WOOF   | 0    | Without woofer             |           |
|        | 1    | With woofer                |           |
| RESE1  | 0    |                            | NON USED  |
|        | 1    |                            |           |
| AV SV  | 0    | No save last AV            |           |
|        | 1    | Last AV save               |           |

**Table. 3 OPTION 3 Function**

| Option | Code | Function                       | Remark         |
|--------|------|--------------------------------|----------------|
| WIDE   | 0    | 4:3 TV                         |                |
|        | 1    | 16:9 TV                        |                |
| TEXT   | 0    | WITHOUT TEXT                   |                |
|        | 1    | WITH TEXT                      |                |
| CH+AU  | 0    | WITHOUT D/K CHINA or BB SYSTEM |                |
|        | 1    | WITH D/K CHINA or BB SYSTEM    |                |
| HEDV   | 0    | WITHOUT HIGH DEVIATION         | High deviation |
|        | 1    | WITH HIGH DEVIATION            |                |
| DOLBY  | 0    | WITHOUT DOLBY VIRTUAL          |                |
|        | 1    | WITH DOLBY VIRTUAL             |                |
| RESE3  |      |                                | NON USED       |
|        |      |                                |                |
| HOTEL  | 0    | WITHOUT HOTEL FUNCTION         |                |
|        | 1    | WITH HOTEL FUNCTION            |                |
| RESE2  |      |                                | NON USED       |
|        |      |                                |                |

**Table 4. OPTION 4 Function**

| State            | Language         | Function  |
|------------------|------------------|---|
| LANG             | 0:ENG Only       | English   |
|                  | 1:EU 5EA         | English/German/French/Italy/Spanish                               |
|                  | 2:EU ETC         | Netherlands/Sweden/Norway/Denmark/Finland/Portugal/Rumania/Poland |
|                  |                  | /Hungary/Czech/Russia   |
|                  | 3:GREECE         |   |
| LANG<br>(NON EU) | 0:ENG Only       | English   |
|                  | 1:PARSI          | English/Farsi   |
|                  | 2:ARAB URDU      | English/French/Arab/Urdu  |
| T-LAN            | 0:West EU        | English/French/Swedish/Czech/German/Spanish/Italian               |
|                  | 1:East EU1       | Polish/French/Swedish/Czech/German/Slovenian/Italian/Rumanian     |
|                  | 2:Turkey EU1     | English/French/Swedish/Turkish/German/Spanish/Italian             |
|                  | 3:East EU2       | English/Czech/Hungarian/Serbian/German/Polish/Turkish/Rumanian    |
|                  | 4:Cyrillic 1     | Polish/Russia/Estonian/Swedish                                    |
|                  | 5:Cyrillic 2     | Polish/Russia/Swedish/Czech/Estonian                              |
|                  | 6:Cyrillic 3     | English/Russia/Estonian/Czech/German/Ukrainian                    |
|                  | 7:Turkey/Greek 1 | English/French/Swedish/Turkish/German/Spanish/Italian/Greek       |
|                  | 8:Turkey/Greek 2 | English/Turkish/German/Turkish/Greek                              |
|                  | 9:Turkey/Greek 3 | English/French/Swedish/Turkish/German/Spanish/Italian/Greek       |
|                  | 10:Arab/France   | English/French/English/Arabic                                     |
|                  | 11:Arab/English  | English/French/Turkish/Arabic                                     |
|                  | 12:Arab/Hebrew 1 | Hebrew/Arabic   |
|                  | 13:Arab/Hebrew 2 | English/French/Hebrew/Arabic                                      |
|                  | 14:Farsi/English | English/French/Turkish/Farsi                                      |
|                  | 15:Farsi/France  | French/Turkish/Farsi  |
|                  | 16:Farsi all     |   |
| MAX V            |                  | Max Volume  |

## 8. Sound Pre scaler

Don't adjust mass-production. Because this value of SVC setting is set to come up to standard. Only This standard is for reference.

In case of Phone jack is over 1EA in AV1 & AV2, apply to Phone standard.

- Audio out level: 500mVrms at 100% modulation ratio.

In case of both of AV1 & AV2 is Scart jack, apply to Scart jack standard.

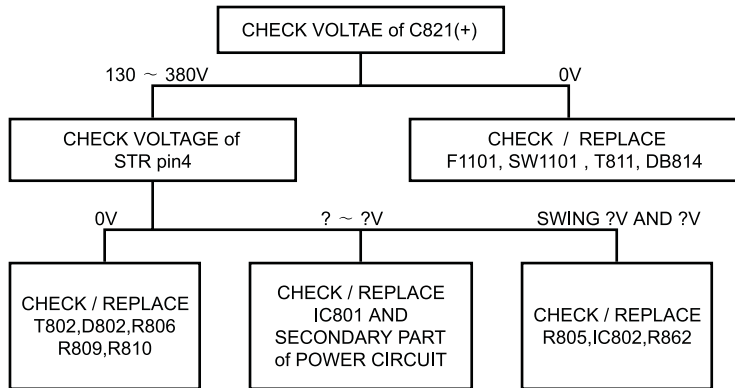
- Audio out level 500Vrms at 54% modulation ratio

\* MSP3410 Pre-scaler setting value.

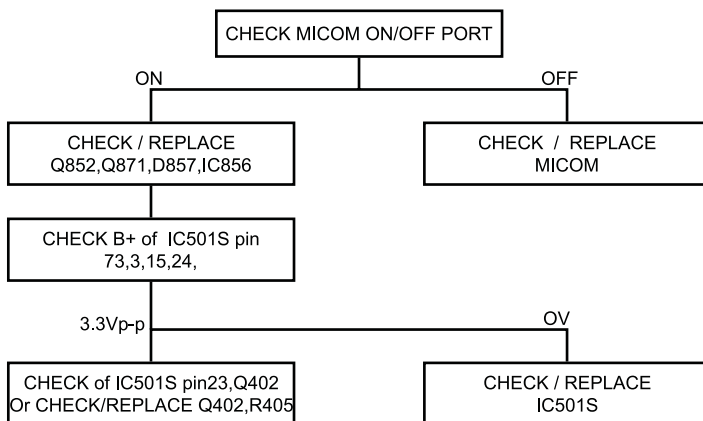
| Item   | Description                | DATA |
|--------|----------------------------|------|
| FP     | FM Pre-scaler              | 21   |
| NP     | Nicam Pre-scaler           | 90   |
| SP     | Scart Pre-scaler           | 20   |
| S1 vol | Scart1 Pre-scaler          | 102  |
| S2 vol | Scart2 Pre-scaler          | 102  |
| VPC-L  | VPC LEVEL                  | 0    |
| M-STR  | EFFECT STRENGTH            | 45   |
| M-HMC  | HARMONIC CONTENT           | 25   |
| M-HP   | HIGH PASS CENTER FREQUENCY | 9    |
| M-LP   | LOW PASS CENTER FREQUENCY  | 11   |
| M-LIM  | AMPLITUDE LIMIT            | 252  |

# TROUBLE SHOOTING

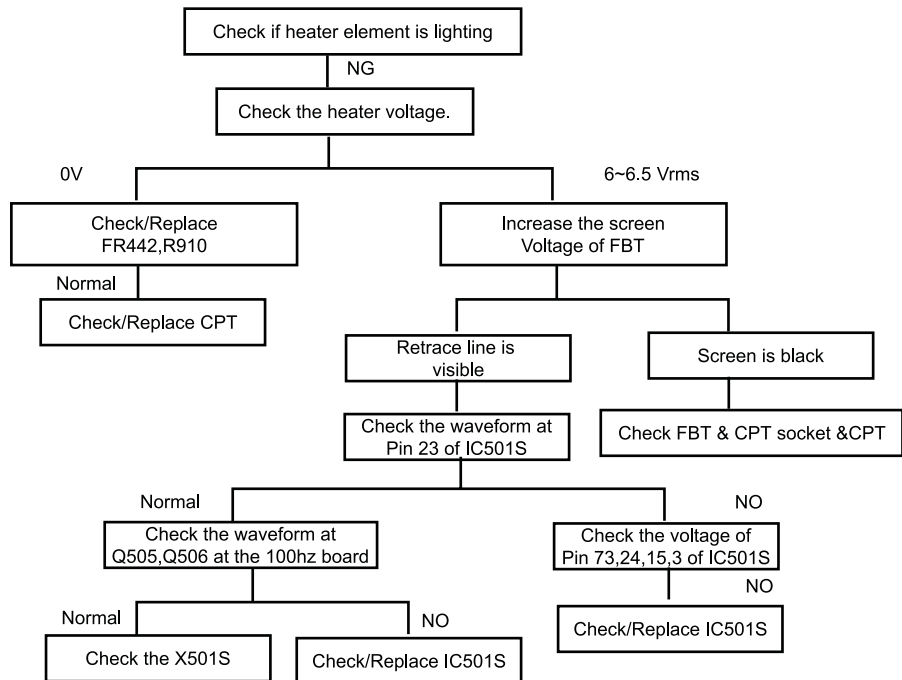
## 1. NO POWER (NOT WORKING SMPS)



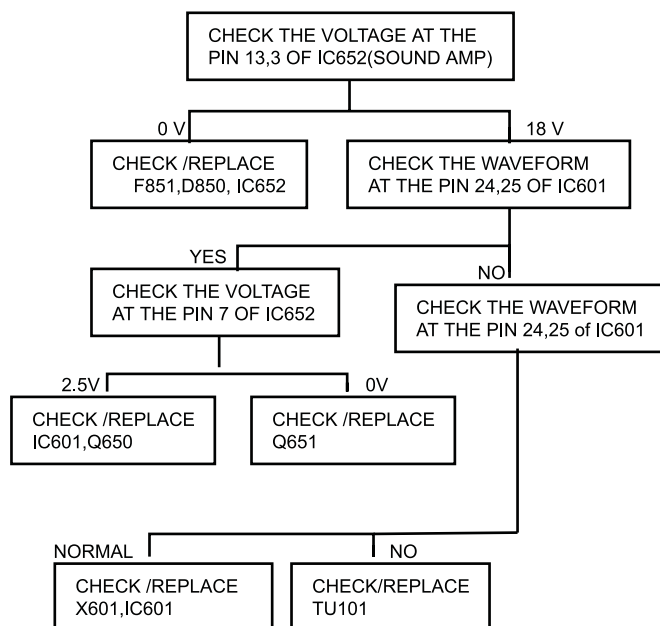
## 2. NO POWER BUT SMPS WORKING



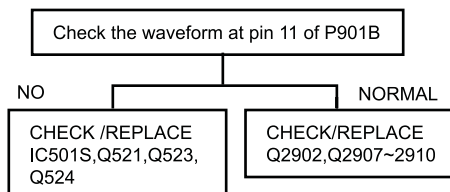
### 3. NO RASTER & PICTURE (H-OUT OK)



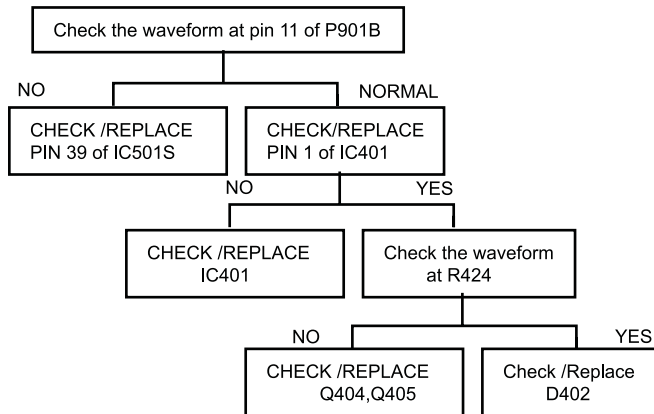
### 4. NO SOUND(PICTURE OK)



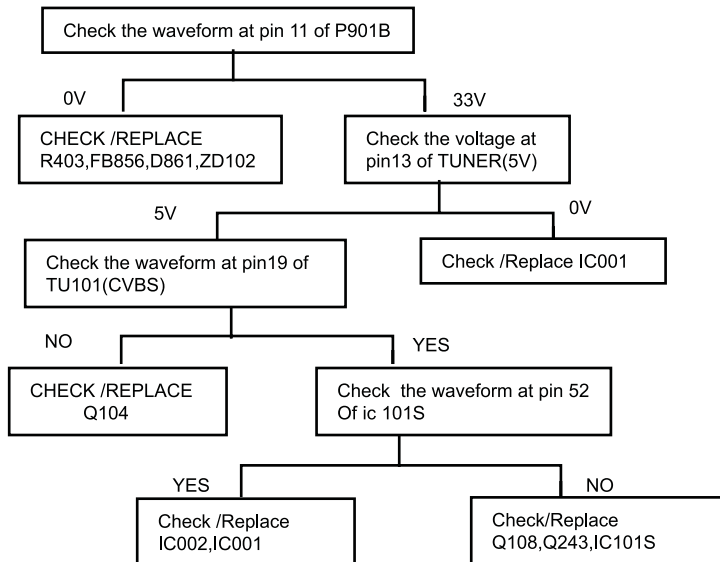
### VM DON T WORKING



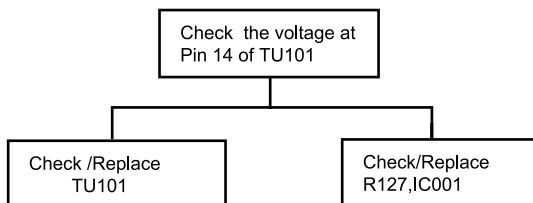
## 5.PIN CUSHION DISTORTION



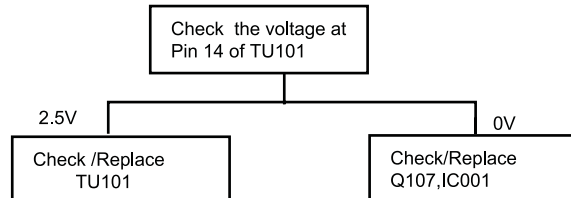
## 6.DON T CATCH CHANNEL(MAIN)



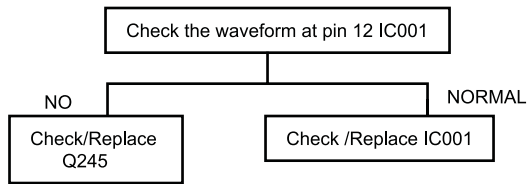
## 7.DON T CATCH NTSC-M(OPTION)



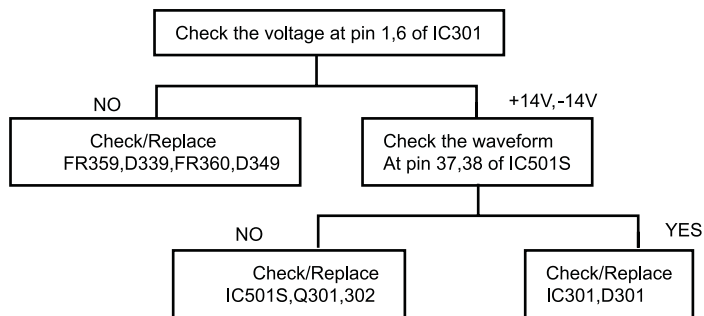
## 8.DON T CATCH SECAM-L(OPTION)



## 9.NO TELETEXT



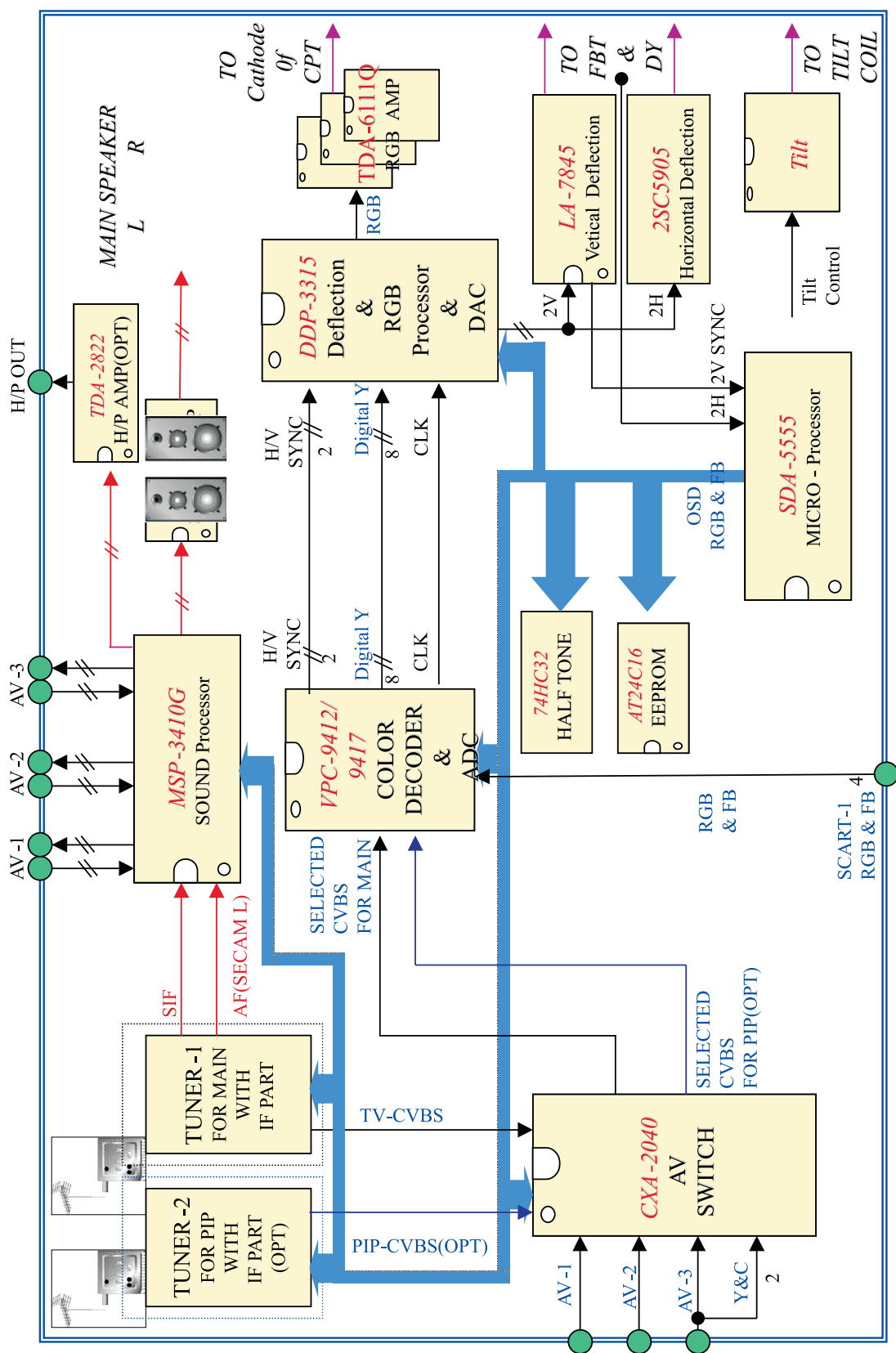
## 10.NO VERTICAL DEFLECTION



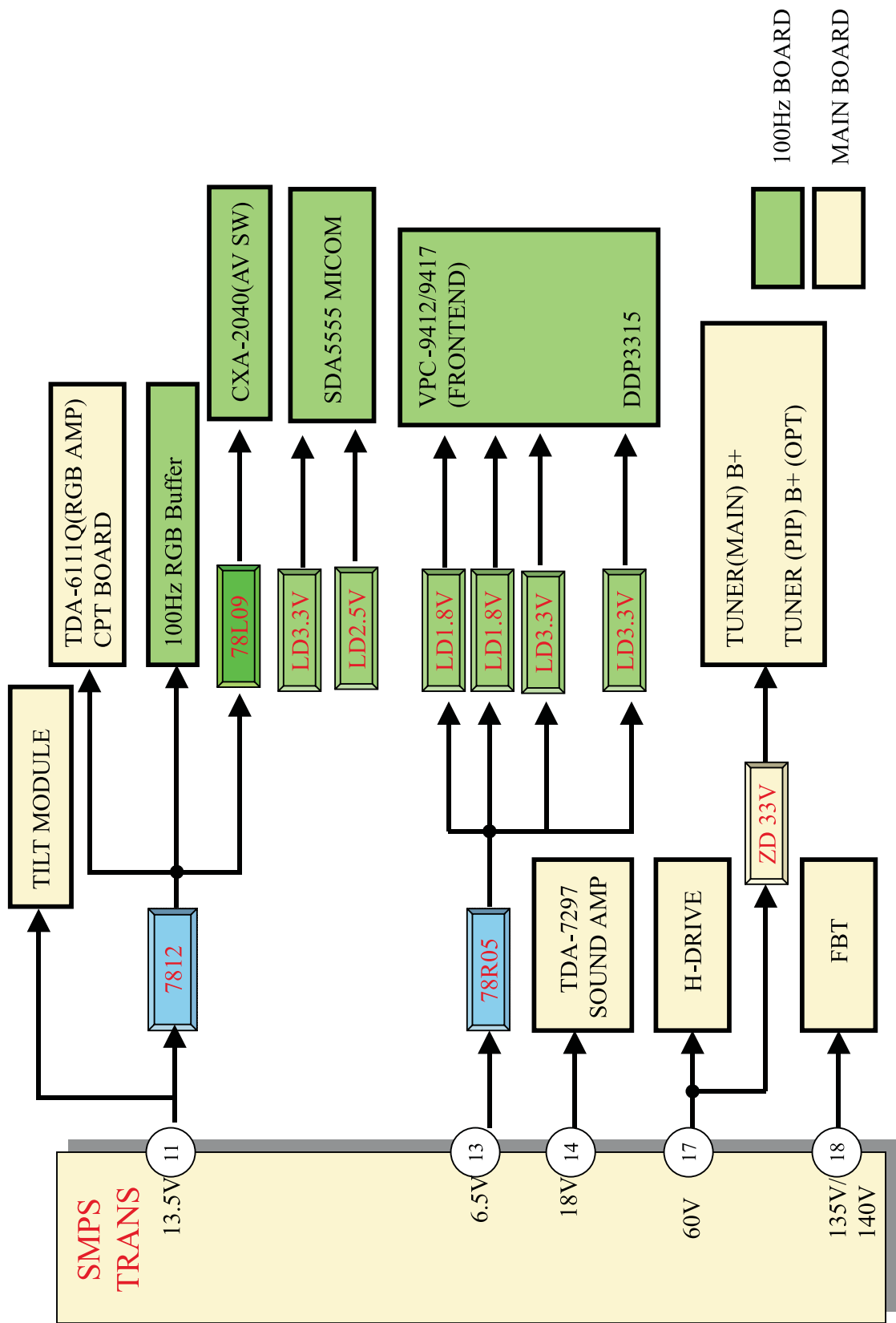


## BLOCK DIAGRAM

### 1.MAIN

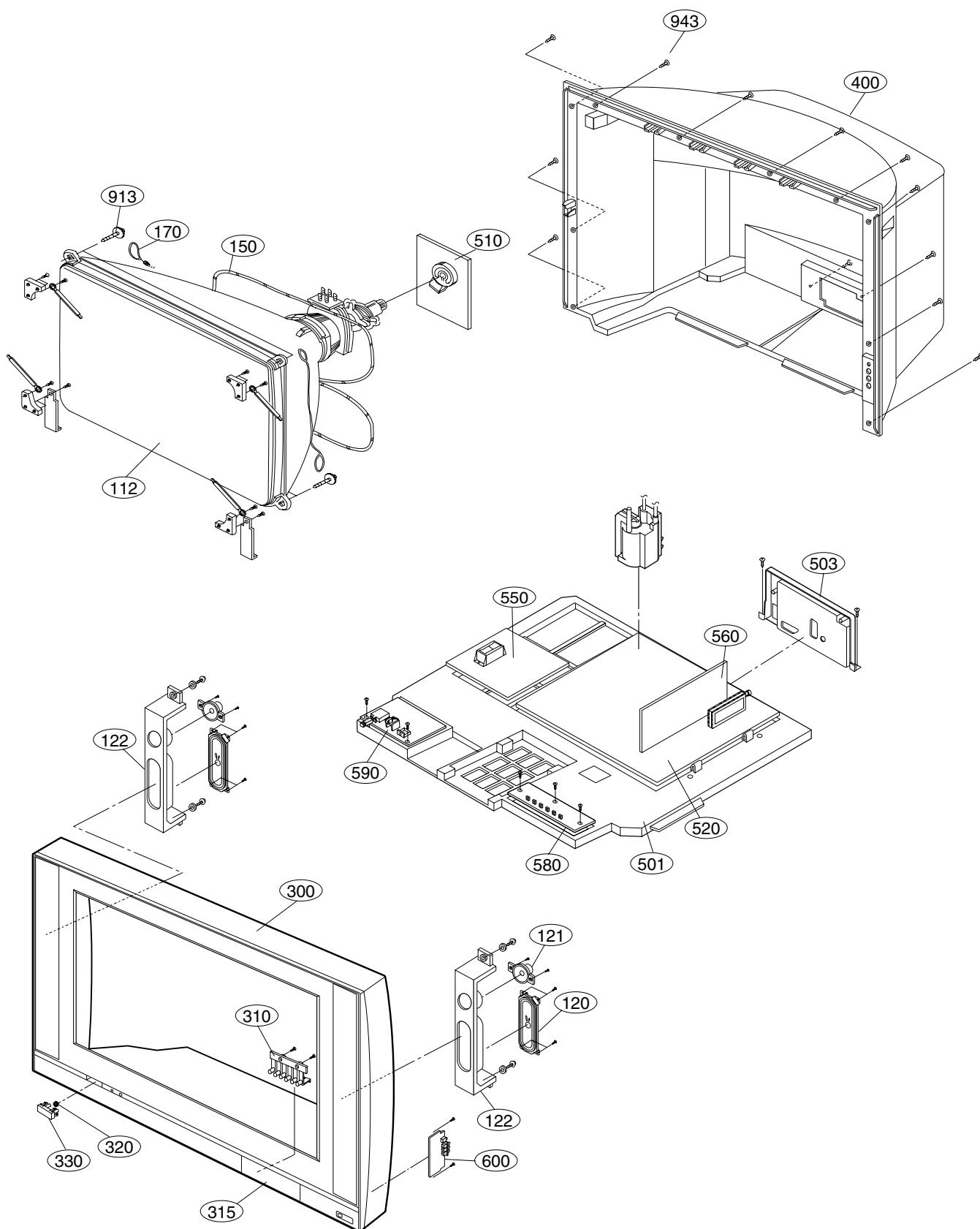


2.SMPS



## MEMO

# EXPLODED VIEW



## EXPLODED VIEW PARTS LIST

| No. | PART NO.    | DESCRIPTION  |
|-----|-------------|--|
| 112 | 2440GE489AS | WVT SET, W76QDD259X V8N7ND   |
| 120 | 6400VA0025B | SPEAKER,FULLRANGE C163P02K1450 8OHM 15/20W 85DB OTHERS 57X160X52.5 |
| 121 | 120-C76G    | SPEAKER,TWEETER C050TX-357K14 FOSTER 8OHM 15/25W 88DB OTHERS NON   |
| 122 | 4810V00689A | BRACKET, SPEAKER RN-32FZ30 MC021A ABS, HF-380                      |
| 150 | 6140VC2006A | COIL,DEGAUSSING KOREA TRADING 32" TURN L=600                       |
| 170 | 170-797X    | CPT EARTH, 32" 144T 2LUG 1P*2                                      |
| 300 | 3091V00B57R | CABINET ASSEMBLY, RT-32FZ30RB STEREO MC036A SCART(84B)             |
| 310 | 5020V00775B | BUTTON, CONTROL DN-32FZ33H ABS, HI-153 6KEY #84B                   |
| 315 | 3580V00084D | DOOR, CONTROL RE-32FZ30RX ABS, HF-380                              |
| 320 | 320-062E    | SPRING, KNOB   |
| 330 | 5020V00728B | BUTTON, POWER DN-32FZ32H ABS, HF-380 1KEY #102"                    |
| 400 | 3809V00A93K | BACK COVER ASSEMBLY, RT-32FZ30RB(W EARPHONE) 1SCART 1PHONE MC036A  |
| 501 | 4810V00684D | BRACKET, MAIN RE-32FZ30RQ MC036A HIPS 407AF V2                     |
| 503 | 4811V00024J | BRACKET ASSEMBLY, REAR AV RE-32FZ30RX PHONE+SCART MC036A .         |
| 510 | 6871VSMZ52B | PWB(PCB) ASSEMBLY,SUB, CPT MC036A RT-32FZ60RB.AHLLKG LG32"         |
| 520 | 6871VMMT03C | PWB(PCB) ASSEMBLY,MAIN MC036A RT-32FZ30RB.ALLLKR M/I               |
| 530 | 6871VSMW05A | PWB(PCB) ASSEMBLY,SUB CONT MC036A FRONT CTRL RE32FZ30RX            |
| 540 | 6871VSMW04A | PWB(PCB) ASSEMBLY,SUB CONT MC036A POWER CTRL RE32FZ30RX            |
| 550 | 6871VSMW22A | PWB(PCB) ASSEMBLY,SUB SUB MC036A REACTOR SUB                       |
| 560 | 6871VSMZ65M | PWB(PCB) ASSEMBLY,SUB SUB MC036A RT-32FZ30RB(W/ PIP, EYE(3P), E-P) |
| 600 | 6871VSMW03B | PWB(PCB) ASSEMBLY,SUB A/V MC036A RT-29FB91RB.ATLLKX                |
| 700 | 0IGL120104A | IC,LG SEMICONDUCTOR" CDS SENSOR MODULE(P1201-04)                   |
| 913 | 332-229M    | SCREW,DRAWING PAN WASHER 7mm 45mm MSWR3 / FZY                      |
| 943 | 1PTF0403116 | SCREW TAP TITE(P),TRUSS HEAD + D4.0 L16.0 MSWR3/FZB                |

# REPLACEMENT PARTS LIST

| LOCA. NO          | PART NO     | DESCRIPTION                              | LOCA. NO | PART NO     | DESCRIPTION                           |
|-------------------|-------------|--|----------|-------------|---------------------------------------|
| <b>IC</b>         |             |  |          |             |                                       |
| D850              | 0ISK100300A | SLA1003 SIP12 BK                         | Q164     | 0TR733009AA | KSA733C-Y TP TO-92                    |
| IC002             | 0IAL241610B | AT24C16A-10PI-2.7 8PIN DIP ST            | Q165     | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA           |
| IC003             | 0IPH743200A | 74HC32D 14SOP TP QUAD 2-INPUT OR GATE    | Q166     | 0TR733009AA | KSA733C-Y TP TO-92                    |
| IC012             | 0IFA754207A | KA75420ZTA(KA7542ZTA) 3P,TO-92 TP 4.2V   | Q167     | 0TR733009AA | KSA733C-Y TP TO-92                    |
| IC013             | 0IFA752700A | KA75270Z 3 TP RE-SET IC MC-007           | Q168     | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA           |
| IC014             | 0IMCRUK002B | S78DL33L AUK 3P, TO-92L TP 3.3V REGU.    | Q200     | 0TR733009AA | KSA733C-Y TP TO-92                    |
| IC015             | 0IMCRUK003A | S5225M AUK 5SOP, SOT-25                  | Q240     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| IC016             | 0IAL241610B | AT24C16A-10PI-2.7 8PIN DIP ST EEPROM     | Q242     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| IC101S            | 0IMCRMN022B | VSP9417B VK C4 80P MQFP                  | Q243     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| IC102             | 0IMCRSG011A | LD1086V18 3DIP,TO-220 ST 1.5A-L/DROP REG | Q244     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| IC102S            | 0ISO204000A | CXA2040AQ 32P,QFP BK IIC BUS VIDEO S/W   | Q245     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| IC103             | 0IMCRSG011A | LD1086V18 3DIP,TO-220 ST 1.5A-L/DROP REG | Q246     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| IC104             | 0ISG111733B | LD1117V33C 3SIP ST                       | Q246     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| IC301             | 0ISA784500A | LA7845 7SIP V/OUT(1.5A)                  | Q2902    | 0TR319809AA | KTC3198(KTC1815) TP TO92 50V 150MA    |
| IC401             | 0IKE455800E | KIA4558 8DIP DUAL OP AMP                 | Q2907    | 0TR126609AA | KTA1266-Y(KTA1015) TP TO92 50V 150MA  |
| IC501             | 0IMCRMN024A | DDP3315C QA G3 80P QFP R/TP IC           | Q2908    | 0TR319809AA | KTC3198(KTC1815) TP TO92 50V 150MA    |
| IC501S            | 0IMCRMN024A | DDP3315C QA G3 80P QFP R/TP IC           | Q2910    | 0TR437000BA | KTC4370A-Y TO-220IS KEC               |
| IC503             | 0IKE780900M | KIA7809API TO220 ST 3P 9V                | Q301     | 0TR150400BA | CHIP 2SA1504S(ASY) KEC                |
| IC504             | 0ISG111733B | LD1117V33C 3SIP ST -                     | Q301     | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA           |
| IC601             | 0IMCRMN011C | MSP3410G PO B8 V3 52P DIP ST             | Q302     | 0TR150400BA | CHIP 2SA1504S(ASY) KEC                |
| IC601             | 0ISG282200A | TDA2822M 8D DUAL AUDIO AMP(1W)           | Q302     | 0TR733009AA | KSA733C-Y TP TO-92                    |
| IC650             | 0IFA754207A | KA75420ZTA(KA7542ZTA) 3P,TO-92 TP 4.2V   | Q308     | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA           |
| IC652             | 0ISG729700A | TDA7297 15P,SIP BK 2CH 15W DUAL AMP      | Q401     | 0TF200000AA | IRFIBC20G BK I.R 600V                 |
| IC801             | 0ISK665813A | STR-F6658B(LF1352) 5PIN SIP BK STR       | Q402     | 0TRMA20001A | 2SC5905 TRAY TOP-3L 1700V 20A         |
| IC802             | 0ILI817000G | LTV817M-VB 4P,DIP BK PHOTO COUPLER       | Q404     | 0TR127509AC | KTA1275-Y TP(KTA1013),KEC             |
| IC803             | 0ILI817000G | LTV817M-VB 4P,DIP BK PHOTO COUPLER       | Q405     | 0TR205900AB | KTD2059-Y TO-220IS KEC                |
| IC851             | 0IKE780500Q | KIA7805API 3P TO-220 ST 5V(=KIA7805PI)   | Q505     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| IC853             | 0ISS278050A | KA278R05 4P,TO-220F BK LOW DROP 5V       | Q506     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| IC854             | 0ISS278120A | KA278R12 4P,TO-220F BK LOW DROP 12V      | Q511     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| IC856             | 0ISK135000A | SE135N(LF12) 3P 135V ERROR AMP -         | Q512     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| IC901             | 0IPH611190A | TDA6111Q 9SIP RGB AMP                    | Q513     | 0TR127009AA | KTA1270-Y(KTA562TM) TP TO92 50V 100MA |
| IC902             | 0IPH611190A | TDA6111Q 9SIP RGB AMP                    | Q513     | 0TR150400BA | CHIP 2SA1504S(ASY) KEC                |
| IC903             | 0IPH611190A | TDA6111Q 9SIP RGB AMP                    | Q514     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| Q011              | 0IFA270000A | 2N7000TA TO-92, 3P TP                    | Q515     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| Q012              | 0IFA270000A | 2N7000TA TO-92, 3P TP                    | Q516     | 0TR127009AA | KTA1270-Y(KTA562TM) TP TO92 50V 100MA |
| <b>TRANSISTOR</b> |             |  | Q516     | 0TR150400BA | CHIP 2SA1504S(ASY) KEC                |
| IC2002            | 0TR165900AC | KTA1659A-Y TO-220IS BK                   | Q517     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| Q015              | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                   | Q518     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| Q016              | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                   | Q520     | 0TR127009AA | KTA1270-Y(KTA562TM) TP TO92 50V 100MA |
| Q018              | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                   | Q520     | 0TR150400BA | CHIP 2SA1504S(ASY) KEC                |
| Q101              | 0TR733009AA | KSA733C-Y TP TO-92                       | Q521     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| Q103              | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA              | Q523     | 0TR387500AA | CHIP 2SC3875S(ALY) KEC                |
| Q104              | 0TR127009AA | KTA1270-Y(KTA562TM) TP TO92 50V 100MA    | Q524     | 0TR127009AA | KTA1270-Y(KTA562TM) TP TO92 50V 100MA |
| Q105              | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA              | Q524     | 0TR150400BA | CHIP 2SA1504S(ASY) KEC                |
| Q108              | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA              | Q601     | 0TR733009AA | KSA733C-Y TP TO-92                    |
| Q1101             | 0TR319809AA | KTC3198(KTC1815) TP TO92 50V 150MA       | Q602     | 0TR733009AA | KSA733C-Y TP TO-92                    |
| Q111              | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA              | Q651     | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA           |
| Q161              | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA              | Q854     | 0TR322709AA | KTC3227-Y,TP(KTC1627A),KEC            |
| Q162              | 0TR733009AA | KSA733C-Y TP TO-92                       | Q855     | 0TR421009AB | BF421 TP TELEFUNKEN TO92 KEC          |
| Q163              | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA              | Q856     | 0TR102009AB | KRC102M(KRC1202) TP NA NA NA          |
|                   |             |  | Q857     | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA           |
|                   |             |  | Q871     | 0TR945009AA | KSC945C-Y TP TO92 50V 150MA           |
|                   |             |  | Q900     | 0TR127109AA | KTA1271Y (KTA950) TP TO92 50V 100MA   |

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|--|---|--|

| LOCA. NO         | PART NO     | DESCRIPTION                              |
|------------------|-------------|--|
| <b>DIODE</b>     |             |  |
| D011             | 0DD414809ED | 1N4148 TP GRANDE                         |
| D012             | 0DD414809ED | 1N4148 TP GRANDE                         |
| D160             | 0DD414809ED | 1N4148 TP GRANDE                         |
| D161             | 0DD414809ED | 1N4148 TP GRANDE                         |
| D2901            | 0DD414809ED | 1N4148 TP GRANDE                         |
| D2902            | 0DD414809ED | 1N4148 TP GRANDE                         |
| D2903            | 0DD414809ED | 1N4148 TP GRANDE                         |
| D2906            | 0DD414809ED | 1N4148 TP GRANDE                         |
| D2907            | 0DD414809ED | 1N4148 TP GRANDE                         |
| D2909            | 0DD150009CA | RGP15J TP GULF SEMICONDUCTOR LTD.        |
| D2910            | 0DD150009CA | RGP15J TP GULF SEMICONDUCTOR LTD.        |
| D2911            | 0DD414809ED | 1N4148 TP GRANDE                         |
| D301             | 0DD200009AF | RU2M V(1) TP SANKEN                      |
| D339             | 0DD200009AF | RU2M V(1) TP SANKEN                      |
| D349             | 0DD200009AF | RU2M V(1) TP SANKEN                      |
| D351             | 0DD414809ED | 1N4148 TP GRANDE                         |
| D402             | 0DD011150AA | ESC011M-15 TO3PF 400V 5A 50A 0.3SEC 10UA |
| D410             | 0DD150009CA | RGP15J TP GULF SEMICONDUCTOR LTD.        |
| D413             | 0DD150009CC | RGP15G TP GULF SEMICONDUCTOR LTD.        |
| D414             | 0DD100009AE | RU1A V(1) TP SANKEN                      |
| D425             | 0DD414809ED | 1N4148 TP GRANDE                         |
| D505             | 0DD414809ED | 1N4148 TP GRANDE                         |
| D506             | 0DD414809ED | 1N4148 TP GRANDE                         |
| D507             | 0DD414809ED | 1N4148 TP GRANDE                         |
| D802             | 0DD060009AC | TVR06J TP - 600V 250NSEC                 |
| D803             | 0DD100009AM | EU1ZV(1) TP SANKEN                       |
| D804             | 0DD414809ED | 1N4148 TP GRANDE                         |
| D857             | 0DD414809ED | 1N4148 TP GRANDE                         |
| D858             | 0DD420000BB | D4L20U SHINDENGEN                        |
| D861             | 0DD060009AC | TVR06J TP - 600V 250NSEC                 |
| D900             | 0DR060009AA | TVR06J TP DO41 600V 0.6A                 |
| D903             | 0DR060009AA | TVR06J TP DO41 600V 0.6A                 |
| D909             | 0DR060009AA | TVR06J TP DO41 600V 0.6A                 |
| DB814            | 0DRGS00011A | GSIB660 5S 600V 6A 180A 100SEC 0.00001A  |
| LD1101           | 162-002B    | LED ASSY (MC51A,M-8.9)                   |
| ZD012            | 0DZ910009AJ | MTZJ9.1B TP DO34 0.5W 9.1V 5UA           |
| ZD101            | 0DZ330009BA | ZENER HZT33 TAPING                       |
| ZD102            | 0DZ330009BA | ZENER HZT33 TAPING                       |
| ZD1201           | 0DZ620009BB | MTZJ6.2B TP DO34 0.5W 6.2V 5UA           |
| ZD1202           | 0DZ620009BB | MTZJ6.2B TP DO34 0.5W 6.2V 5UA           |
| ZD1205           | 0DZ620009BB | MTZJ6.2B TP DO34 0.5W 6.2V 5UA           |
| ZD1206           | 0DZ620009BB | MTZJ6.2B TP DO34 0.5W 6.2V 5UA           |
| ZD401            | 0DZ510009DB | MTZJ5.1B TP DO34 - 5.1V 5UA              |
| ZD601            | 0DZ820009AH | MTZJ8.2B TP DO34 - 8.2V 5UA              |
| ZD650            | 0DZ910009AJ | MTZJ9.1B TP DO34 0.5W 9.1V 5UA           |
| <b>CAPACITOR</b> |             |  |
| C003             | 0CE106DF618 | 10UF STD 16V M FL TP5                    |
| C010             | 0CE226DD618 | 22UF STD 10V 20% FL TP 5                 |
| C011             | 0CE226DD618 | 22UF STD 10V 20% FL TP 5                 |

| LOCA. NO | PART NO     | DESCRIPTION                       |
|----------|-------------|-----------------------------------|
| C012     | 0CQ1041N509 | 0.1UF D 100V 10% PE TP5           |
| C013     | 0CE477DD618 | 470UF STD 10V M FL TP5            |
| C015     | 0CE106DF618 | 10UF STD 16V M FL TP5             |
| C020     | 0CE476DD618 | 47UF STD 10V 20% FL TP 5          |
| C021     | 0CE226DD618 | 22UF STD 10V 20% FL TP 5          |
| C024     | 0CE226DD618 | 22UF STD 10V 20% FL TP 5          |
| C030     | 0CE226DD618 | 22UF STD 10V 20% FL TP 5          |
| C031     | 0CE226DD618 | 22UF STD 10V 20% FL TP 5          |
| C036     | 0CE476DD618 | 47UF STD 10V 20% FL TP 5          |
| C101     | 0CE106DF618 | 10UF STD 16V M FL TP5             |
| C102     | 0CE106DK618 | 10UF STD 50V M FL TP5             |
| C103     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52        |
| C103     | 181-007G    | MPE ECQ-V1H334JL3(TR), 50V 0.33UF |
| C104     | 0CE476DD618 | 47UF STD 10V 20% FL TP 5          |
| C105     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52        |
| C106     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52        |
| C108     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52        |
| C109     | 0CE475DK618 | 4.7UF STD 50V 20% FL TP 5         |
| C1102    | 0CE107DD618 | 100UF STD 10V M FL TP5            |
| C1103    | 0CN1030F679 | 10000PF D 16V 20% X5R TA52        |
| C1104    | 0CE476DD618 | 47UF STD 10V 20% FL TP 5          |
| C1130    | 0CQZVBK002D | A.C 275V 0.47UF K (S=22.5)        |
| C114     | 0CE476DD618 | 47UF STD 10V 20% FL TP 5          |
| C115     | 0CX4700K409 | 47P 50V J SL TA52                 |
| C116     | 0CX4700K409 | 47P 50V J SL TA52                 |
| C117     | 0CE227DD618 | 220UF STD 10V M FL TP5            |
| C118     | 0CX4700K409 | 47P 50V J SL TA52                 |
| C119     | 0CX4700K409 | 47P 50V J SL TA52                 |
| C1203    | 0CN2210K519 | 220P 50V K B TA52                 |
| C1204    | 0CN1040K949 | 0.1UF D 50V 80%,-20% F(Y5V) TA52  |
| C1205    | 0CN2210K519 | 220P 50V K B TA52                 |
| C1206    | 0CN4710K519 | 470P 50V K B TA52                 |
| C1207    | 0CN4710K519 | 470P 50V K B TA52                 |
| C1208    | 0CN2210K519 | 220P 50V K B TA52                 |
| C1209    | 0CE475DK618 | 4.7UF STD 50V 20% FL TP 5         |
| C121     | 0CE107DD618 | 100UF STD 10V M FL TP5            |
| C121     | 0CE225DK618 | 2.2UF STD 50V 20% FL TP 5         |
| C1210    | 0CE475DK618 | 4.7UF STD 50V 20% FL TP 5         |
| C1211    | 0CN2210K519 | 220P 50V K B TA52                 |
| C1212    | 0CE475DK618 | 4.7UF STD 50V 20% FL TP 5         |
| C1213    | 0CE475DK618 | 4.7UF STD 50V 20% FL TP 5         |
| C123     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52        |
| C124     | 0CE106DF618 | 10UF STD 16V M FL TP5             |
| C124     | 0CE107DD618 | 100UF STD 10V M FL TP5            |
| C125     | 0CE108DD618 | 1000UF STD 10V M FL TP5           |
| C126     | 0CE107DD618 | 100UF STD 10V M FL TP5            |
| C126     | 0CE108DD618 | 1000UF STD 10V M FL TP5           |
| C126     | 0CE477DD618 | 470UF STD 10V M FL TP5            |
| C127     | 0CE476DD618 | 47UF STD 10V 20% FL TP 5          |
| C129     | 0CE106DK618 | 10UF STD 50V M FL TP5             |
| C133     | 0CE107DD618 | 100UF STD 10V M FL TP5            |
| C133     | 0CE477DD618 | 470UF STD 10V M FL TP5            |

|  |                          |                       |
|--|--------------------------|-----------------------|
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|  | CE : Electrolytic        | RN : Metal Film       |
|  |                          | RF : Fusible          |

| LOCA. NO | PART NO     | DESCRIPTION                      |
|----------|-------------|----------------------------------|
| C135     | 0CE107DD618 | 100UF STD 10V M FL TP5           |
| C136     | 0CE107DD618 | 100UF STD 10V M FL TP5           |
| C137     | 0CE107DD618 | 100UF STD 10V M FL TP5           |
| C137     | 0CE477DD618 | 470UF STD 10V M FL TP5           |
| C138     | 0CE107DD618 | 100UF STD 10V M FL TP5           |
| C161     | 0CN1010K519 | 100PF D 50V 10% B(Y5P) TA52      |
| C162     | 0CN2210K519 | 220P 50V K B TA52                |
| C163     | 0CE476DF618 | 47UF STD 16V M FL TP5            |
| C164     | 0CN1040K949 | 0.1UF D 50V 80%,-20% F(Y5V) TA52 |
| C165     | 0CE105DK618 | 1UF STD 50V M FL TP5             |
| C166     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52       |
| C167     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52       |
| C201     | 0CN1040K949 | 0.1UF D 50V 80%,-20% F(Y5V) TA52 |
| C202     | 0CX4700K409 | 47P 50V J SL TA52                |
| C206     | 0CE107DD618 | 100UF STD 10V M FL TP5           |
| C206     | 0CE227DD618 | 220UF STD 10V M FL TP5           |
| C207     | 0CE226DF618 | 22UF STD 16V M FL TP5            |
| C208     | 0CE226DF618 | 22UF STD 16V M FL TP5            |
| C212     | 0CN4710K519 | 470P 50V K B TA52                |
| C213     | 0CN4710K519 | 470P 50V K B TA52                |
| C214     | 0CN4710K519 | 470P 50V K B TA52                |
| C220     | 0CE106DF618 | 10UF STD 16V M FL TP5            |
| C221     | 0CN4710K519 | 470P 50V K B TA52                |
| C222     | 0CN1010K519 | 100PF D 50V 10% B(Y5P) TA52      |
| C228     | 0CE226DF618 | 22UF STD 16V M FL TP5            |
| C229     | 0CE226DF618 | 22UF STD 16V M FL TP5            |
| C245     | 0CE106DF618 | 10UF STD 16V M FL TP5            |
| C248     | 0CE106DF618 | 10UF STD 16V M FL TP5            |
| C249     | 0CE107DF618 | 100UF STD 16V M FL TP5           |
| C249     | 0CE226DD618 | 22UF STD 10V 20% FL TP 5         |
| C256     | 0CE106DF618 | 10UF STD 16V M FL TP5            |
| C260     | 0CE336DF618 | 33UF STD 16V M FL TP5            |
| C2903    | 0CE106DH618 | 10UF STD 25V M FL TP5            |
| C2909    | 0CE106DH618 | 10UF STD 25V M FL TP5            |
| C2910    | 0CN1010K519 | 100PF D 50V 10% B(Y5P) TA52      |
| C2911    | 0CN1010K519 | 100PF D 50V 10% B(Y5P) TA52      |
| C2912    | 0CK4720W510 | 4700P 500V K B S                 |
| C2913    | 0CK4720W510 | 4700P 500V K B S                 |
| C2914    | 0CE106DP618 | 10UF STD 160V M FL TP5           |
| C2915    | 0CE107DK618 | 100UF STD 50V M FL TP5           |
| C2917    | 0CE107DF618 | 100UF STD 16V M FL TP5           |
| C2918    | 0CE107DF618 | 100UF STD 16V M FL TP5           |
| C2919    | 0CE106DP618 | 10UF STD 160V M FL TP5           |
| C2922    | 0CE106DH618 | 10UF STD 25V M FL TP5            |
| C2933    | 0CK1010W515 | 100P 500V K B TS                 |
| C307     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52       |
| C308     | 0CF4741L438 | 0.47UF D 63V 5% TP 5 M/PE NI     |
| C310     | 0CE107BJ618 | 100UF KME 35V M FL TP5           |
| C312     | 0CN2220F569 | 2200P 16V K X TA52               |
| C313     | 0CQ3331N509 | 0.033UF D 100V 10% PE TP5        |
| C316     | 0CE228DJ650 | 2200UF STD 35V M FM7.5 BULK      |
| C324     | 0CQ3331N509 | 0.033UF D 100V 10% PE TP5        |

| LOCA. NO | PART NO     | DESCRIPTION                                |
|----------|-------------|--|
| C331     | 0CQ1021N519 | 0.001U 100V K POLY NI TP                   |
| C333     | 0CN1020K519 | 1000PF D 50V 10% B(Y5P) TA52               |
| C338     | 0CE228DH610 | 2200UF STD 25V M FL BULK                   |
| C339     | 0CK56101515 | 560P 1KV K B TS                            |
| C340     | 181-014Z    | BUP 0.0033UF 1.6KV 5%,-5% FM 28.5*13.5*8.0 |
| C348     | 0CE228BH61A | 2200UF KME 25V M FL TP7.5                  |
| C350     | 0CK56101515 | 560P 1KV K B TS                            |
| C401     | 181-091D    | DEHR33A102KN2A 1000PF 1KV 10%              |
| C402     | 181-091D    | DEHR33A102KN2A 1000PF 1KV 10%              |
| C403     | 0CK22101515 | 220P 1KV K B TP5                           |
| C404     | 181-010A    | PP 400V 0.022UF J                          |
| C405     | 181-014Y    | MPP 1.6KV 0.0015UF J                       |
| C406     | 181-091D    | DEHR33A102KN2A 1000PF 1KV 10%              |
| C408     | 181-015L    | MPP 1600V 0.0095UF H                       |
| C409     | 0CQZVBK004B | 0.027UF D 630V J PP NI FM7.5               |
| C411     | 181-013A    | 0.33UF 200V 5% FM MPP                      |
| C413     | 181-013M    | MPP 400V 0.22UF J                          |
| C414     | 181-010E    | PP 400V 0.12UF J                           |
| C415     | 181-013U    | MPP 630V 0.1UF J                           |
| C416     | 0CE107DK618 | 100UF STD 50V M FL TP5                     |
| C417     | 0CK1030K945 | 0.01UF 50V Z F TR                          |
| C418     | 0CN6810K519 | 680P 50V K B TA52                          |
| C419     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52                 |
| C421     | 181-009V    | PP 200V 0.047UF K                          |
| C423     | 0CE6851K652 | 6.8UF SM,SA 50V 20% FM7.5 BP(S)            |
| C426     | 0CQ6831N509 | 0.068UF D 100V 10% PE TP5                  |
| C437     | 0CK56101515 | 560P 1KV K B TS                            |
| C438     | 0CE107DK618 | 100UF STD 50V M FL TP5                     |
| C440     | 181-091G    | DEHR33D471KN3A 470PF 2KV 10%               |
| C441     | 181-091G    | DEHR33D471KN3A 470PF 2KV 10%               |
| C442     | 0CQ5621N509 | 0.0056UF D 100V 10% PE TP5                 |
| C446     | 0CK56102515 | 560P 2KV K B TS                            |
| C447     | 0CE476DR618 | 47UF STD 250V 20% FL TP 5                  |
| C504     | 0CE476DD618 | 47UF STD 10V 20% FL TP 5                   |
| C506     | 0CE476DD618 | 47UF STD 10V 20% FL TP 5                   |
| C512     | 0CE476DF618 | 47UF STD 16V M FL TP5                      |
| C517     | 0CE227DF618 | 220UF STD 16V M FL TP5                     |
| C517     | 0CE476BF618 | 47UF KME TYPE 16V 20% FL TP 5              |
| C517     | 0CE476DF618 | 47UF STD 16V M FL TP5                      |
| C518     | 0CE227DF618 | 220UF STD 16V M FL TP5                     |
| C518     | 0CE476DF618 | 47UF STD 16V M FL TP5                      |
| C519     | 0CE227DF618 | 220UF STD 16V M FL TP5                     |
| C521     | 0CE476DD618 | 47UF STD 10V 20% FL TP 5                   |
| C523     | 0CE335DK618 | 3.3UF STD 50V 20% FL TP 5                  |
| C524     | 0CK224DF56A | 220000PF 2012 16V 10% R/TP X7R             |
| C525     | 0CK224DF56A | 220000PF 2012 16V 10% R/TP X7R             |
| C526     | 0CK224DF56A | 220000PF 2012 16V 10% R/TP X7R             |
| C527     | 0CK224DF56A | 220000PF 2012 16V 10% R/TP X7R             |
| C527     | 181-007G    | MPE ECQ-V1H334JL3(TR), 50V 0.33UF          |
| C529     | 0CE476DD618 | 47UF STD 10V 20% FL TP 5                   |
| C529     | 0CE476DF618 | 47UF STD 16V M FL TP5                      |
| C529     | 0CE477DD618 | 470UF STD 10V M FL TP5                     |



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| LOCA. NO | PART NO     | DESCRIPTION                        | LOCA. NO | PART NO     | DESCRIPTION                       |
|----------|-------------|------------------------------------|----------|-------------|-----------------------------------|
| C601     | 0CE107DF618 | 100UF STD 16V M FL TP5             | C803     | 181-091G    | DEHR33D471KN3A 470PF 2KV 10%      |
| C601     | 0CE475DK618 | 4.7UF STD 50V 20% FL TP 5          | C806     | 181-014Y    | MPP 1.6KV 0.0015UF J              |
| C602     | 0CN3320F569 | 3300P 16V K X TA52                 | C807     | 181-091C    | DEHR33A471KN2A 470PF 1KV 10%      |
| C603     | 0CN3320F569 | 3300P 16V K X TA52                 | C808     | 0CE107BJ618 | 100UF KME 35V M FL TP5            |
| C604     | 0CE107DF618 | 100UF STD 16V M FL TP5             | C809     | 0CK1020K515 | 1000P 50V K B TS                  |
| C604     | 0CN2210K519 | 220P 50V K B TA52                  | C811     | 181-120K    | 2200PF 4KV M E FMTW LEAD 4.5      |
| C605     | 0CN1520F569 | 1500P 16V K X TA52                 | C813     | 181-091D    | DEHR33A102KN2A 1000PF 1KV 10%     |
| C606     | 0CE107DF618 | 100UF STD 16V M FL TP5             | C814     | 0CQZVBK002A | A.C 275V 0.1UF M (S=15)           |
| C606     | 0CE475DK618 | 4.7UF STD 50V 20% FL TP 5          | C815     | 181-091C    | DEHR33A471KN2A 470PF 1KV 10%      |
| C607     | 0CE475DK618 | 4.7UF STD 50V 20% FL TP 5          | C816     | 181-091D    | DEHR33A102KN2A 1000PF 1KV 10%     |
| C608     | 0CE107DF618 | 100UF STD 16V M FL TP5             | C821     | 181-001U    | LUG(85) 470UF 450V 20% FM         |
| C610     | 0CE106DF618 | 10UF STD 16V M FL TP5              | C824     | 0CQZVBK002C | A.C 275V 0.22UF K (S=22.5)        |
| C611     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52         | C853     | 0CE108DF618 | 1000UF STD 16V M FL TP5           |
| C612     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52         | C855     | 0CE477DD618 | 470UF STD 10V M FL TP5            |
| C613     | 0CE107DD618 | 100UF STD 10V M FL TP5             | C856     | 181-091C    | DEHR33A471KN2A 470PF 1KV 10%      |
| C614     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52         | C857     | 0CE228DF618 | 2200UF STD 16V M FL TP5           |
| C615     | 0CX5600K409 | 56P 50V J SL TA52                  | C858     | 0CE108DF618 | 1000UF STD 16V M FL TP5           |
| C617     | 0CN1040K949 | 0.1UF D 50V 80%,-20% F(Y5V) TA52   | C859     | 181-091C    | DEHR33A471KN2A 470PF 1KV 10%      |
| C618     | 181-007G    | MPE ECQ-V1H334JL3(TR), 50V 0.33UF  | C861     | 0CE108DF618 | 1000UF STD 16V M FL TP5           |
| C619     | 181-007G    | MPE ECQ-V1H334JL3(TR), 50V 0.33UF  | C862     | 0CE475CK636 | 4.7UF SHL,SD 50V 20% FM5 BP(D) TP |
| C620     | 181-442Z    | PE,ECQ-B1H104KF3(TR)               | C863     | 181-091C    | DEHR33A471KN2A 470PF 1KV 10%      |
| C621     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52         | C864     | 0CE108BH618 | 1000UF KME 25V M FL TP5           |
| C622     | 0CN1020K519 | 1000PF D 50V 10% B(Y5P) TA52       | C866     | 181-091C    | DEHR33A471KN2A 470PF 1KV 10%      |
| C623     | 0CE106DF618 | 10UF STD 16V M FL TP5              | C867     | 0CE107DN618 | 100UF STD 100V M FL TP5           |
| C624     | 0CE476DD618 | 47UF STD 10V 20% FL TP 5           | C868     | 0CE227DD618 | 220UF STD 10V M FL TP5            |
| C625     | 0CX5600K409 | 56P 50V J SL TA52                  | C869     | 0CE106DH618 | 10UF STD 25V M FL TP5             |
| C626     | 0CN4710K519 | 470P 50V K B TA52                  | C870     | 181-091D    | DEHR33A102KN2A 1000PF 1KV 10%     |
| C627     | 0CX5600K409 | 56P 50V J SL TA52                  | C871     | 0CE227DP61A | 220UF STD 160V 20% FL TP 7.5      |
| C628     | 0CC0200K115 | 2PF D 50V 0.5 PF NP0 TR            | C872     | 0CE227DP61A | 220UF STD 160V 20% FL TP 7.5      |
| C629     | 0CC0200K115 | 2PF D 50V 0.5 PF NP0 TR            | C873     | 0CQ1041N509 | 0.1UF D 100V 10% PE TP5           |
| C630     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52         | C875     | 0CE108DF618 | 1000UF STD 16V M FL TP5           |
| C631     | 0CX5600K409 | 56P 50V J SL TA52                  | C900     | 0CE475BR618 | 4.7UF KME TYPE 250V 20% FL TP 5   |
| C632     | 0CE476DF618 | 47UF STD 16V M FL TP5              | C901     | 0CE475BR618 | 4.7UF KME TYPE 250V 20% FL TP 5   |
| C633     | 0CN2720F569 | 2700P 16V K X TA52                 | C902     | 0CE475DR618 | 4.7UF STD 250V 20% FL TP 5        |
| C634     | 0CN2720F569 | 2700P 16V K X TA52                 | C903     | 0CC0500K115 | 5P 50V D NP0 TS                   |
| C635     | 0CN2720F569 | 2700P 16V K X TA52                 | C904     | 0CE475BR618 | 4.7UF KME TYPE 250V 20% FL TP 5   |
| C636     | 0CN2720F569 | 2700P 16V K X TA52                 | C905     | 0CK5610W515 | 560P 500V K B TS                  |
| C637     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52         | C906     | 0CN1040K949 | 0.1UF D 50V 80%,-20% F(Y5V) TA52  |
| C638     | 0CN1030F679 | 10000PF D 16V 20% X5R TA52         | C907     | 0CN1040K949 | 0.1UF D 50V 80%,-20% F(Y5V) TA52  |
| C639     | 181-442Z    | PE,ECQ-B1H104KF3(TR)               | C910     | 0CE225DK618 | 2.2UF STD 50V 20% FL TP 5         |
| C640     | 181-442Z    | PE,ECQ-B1H104KF3(TR)               | C911     | 0CN1040K949 | 0.1UF D 50V 80%,-20% F(Y5V) TA52  |
| C650     | 0CE108DH618 | 1000UF STD 25V M FL TP5            | C912     | 0CN1040K949 | 0.1UF D 50V 80%,-20% F(Y5V) TA52  |
| C651     | 0CN2230H949 | 22000PF D 25V 80%,-20% F(Y5V) TA52 | C914     | 0CE228DF618 | 2200UF STD 16V M FL TP5           |
| C652     | 0CF2241L438 | 0.22UF D 63V 5% TP 5 M/PE NI       | C915     | 0CK5610W515 | 560P 500V K B TS                  |
| C653     | 0CN3320F569 | 3300P 16V K X TA52                 | C916     | 181-033T    | 2KV B 222K TP7.5                  |
| C655     | 0CF2241L438 | 0.22UF D 63V 5% TP 5 M/PE NI       | C917     | 0CN1040K949 | 0.1UF D 50V 80%,-20% F(Y5V) TA52  |
| C656     | 0CN3320F569 | 3300P 16V K X TA52                 | C918     | 0CC0500K115 | 5P 50V D NP0 TS                   |
| C657     | 0CE336DD618 | 33UF STD 10V 20% FL TP 5           | C919     | 0CK5610W515 | 560P 500V K B TS                  |
| C660     | 181-007G    | MPE ECQ-V1H334JL3(TR), 50V 0.33UF  | C920     | 0CC5600K415 | 56P 50V J NP0 TP                  |
| C661     | 181-007G    | MPE ECQ-V1H334JL3(TR), 50V 0.33UF  | C925     | 0CN1040K949 | 0.1UF D 50V 80%,-20% F(Y5V) TA52  |
| C662     | 181-007G    | MPE ECQ-V1H334JL3(TR), 50V 0.33UF  | C927     | 0CC4700K415 | 47P 50V J NP0 TP                  |
| C663     | 181-007G    | MPE ECQ-V1H334JL3(TR), 50V 0.33UF  | C928     | 0CC3300K415 | 33P 50V J NP0 TP                  |

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| LOCA. NO                   | PART NO     | DESCRIPTION                                 |
|----------------------------|-------------|---|
| C990                       | 0CN1020K519 | 1000PF D 50V 10% B(Y5P) TA52                |
| C991                       | 0CN1020K519 | 1000PF D 50V 10% B(Y5P) TA52                |
| <b>COIL &amp; INDUCTOR</b> |             |   |
| L101                       | 0LA0102K139 | INDUCTOR,AXIAL LEAD 10UH K 4*10.5 TP        |
| L1101                      | 0LA0102K119 | INDUCTOR,AXIAL LEAD 10UH K 2.3*3.4 TP       |
| L1201                      | 0LA0472K119 | INDUCTOR,AXIAL LEAD 47UH K 2.3*3.4 TP       |
| L1202                      | 0LA0472K119 | INDUCTOR,AXIAL LEAD 47UH K 2.3*3.4 TP       |
| L1203                      | 0LA0472K119 | INDUCTOR,AXIAL LEAD 47UH K 2.3*3.4 TP       |
| L1204                      | 0LA0472K119 | INDUCTOR,AXIAL LEAD 47UH K 2.3*3.4 TP       |
| L204                       | 0LA0102K119 | INDUCTOR,AXIAL LEAD 10UH K 2.3*3.4 TP       |
| L205                       | 0LA0102K119 | INDUCTOR,AXIAL LEAD 10UH K 2.3*3.4 TP       |
| L206                       | 0LA0102K119 | INDUCTOR,AXIAL LEAD 10UH K 2.3*3.4 TP       |
| L207                       | 0LA0102K119 | INDUCTOR,AXIAL LEAD 10UH K 2.3*3.4 TP       |
| L401                       | 150-L02Q    | COIL,LINEARITY 10UH PHY TURN                |
| L402                       | 150-C13B    | COIL,CHOKE 52UH PHY TURN                    |
| L403                       | 150-C13B    | COIL,CHOKE 52UH PHY TURN                    |
| L404                       | 150-W01A    | COIL,CHOKE WIDTH 24UH                       |
| L407                       | 150-717K    | COIL,CHOKE 1.1UH PHY TURN                   |
| L603                       | 0LA0102K119 | INDUCTOR,AXIAL LEAD 10UH K 2.3*3.4 TP       |
| L605                       | 0LA0102K119 | INDUCTOR,AXIAL LEAD 10UH K 2.3*3.4 TP       |
| L850                       | 6170VZ0008A | TRANSFORMER, TS4841 30500UH                 |
| L853                       | 150-C02F    | COIL,CHOKE82UH PHY TURN                     |
| L901                       | 0LA0272K139 | INDUCTOR,AXIAL LEAD27UH K 4X10.5 TP         |
| T401                       | 6170VC0002A | TRANSFORMER, H-DRIVE EER-2619               |
| T403                       | 151-E06A    | TRANSFORMER,POWER EER2834 0UH               |
| T802                       | 6170VMCA16T | TRANSFORMER,SMPS[COIL] EE5555 390UH 0.25PHY |
| <b>CONNECTOR</b>           |             |   |
| G18                        | 387-907F    | 1P 350MM R-H UL1617AWG22                    |
| G19                        | 387-907F    | 1P 350MM R-H UL1617AWG22                    |
| P1103                      | 387-552Q    | 2P 10.0MM 250MM H-H UL1617AWG22             |
| P1152B                     | 387-A08F    | 8P 2.5MM 350MM H-B UL1007AWG26              |
| P601B                      | 387-J12K    | 12P 2.5MM 600MM H-H UL1185AWG26             |
| P602B                      | 387-B04K    | 4P 2.5MM 600MM H-B UL1185AWG26              |
| P902B                      | 387-A10G    | 10P 2.5MM 400MM H-B UL1007AWG26             |
| <b>RESISTOR</b>            |             |   |
| AR101                      | 0RRZVTA001D | 22 OHM 1 / 16 W 1608 5% R/TP 4P             |
| AR102                      | 0RRZVTA001D | 22 OHM 1 / 16 W 1608 5% R/TP 4P             |
| F851                       | 0RP0020J809 | 0.02 OHM 1 W 20% TA52                       |
| F855                       | 0RP0050H709 | 0.05 OHM 1/2 W 10% TA52                     |
| F856                       | 0RP0020J809 | 0.02 OHM 1 W 20% TA52                       |
| FB854                      | 0RF0470H609 | 0.47 OHM 1/2 W 5.00% TA52                   |
| FR2948                     | 0RF1000H609 | 100 OHM 1/2 W 5.00% TA52                    |
| FR359                      | 0RP0050H709 | 0.05 OHM 1/2 W 10% TA52                     |
| FR360                      | 0RP0050H709 | 0.05 OHM 1/2 W 10% TA52                     |
| FR442                      | 0RF0301K607 | 3 OHM 2 W 5.00% TA62                        |
| FR443                      | 0RP0050H709 | 0.05 OHM 1/2 W 10% TA52                     |
| FR448                      | 0RP0050H709 | 0.05 OHM 1/2 W 10% TA52                     |
| J127                       | 0RN1201F409 | 1.2K OHM 1/6 W 1.00% TA52                   |
| R101                       | 0RD0752F609 | 75 OHM 1/6 W 5.00% TA52                     |

| LOCA. NO | PART NO     | DESCRIPTION               |
|----------|-------------|---------------------------|
| R102     | 0RD0822F609 | 82 OHM 1/6 W 5.00% TA52   |
| R103     | 0RS1801H609 | 1.8K OHM 1/2 W 5.00% TA52 |
| R104     | 0RD0102F609 | 10 OHM 1/6 W 5% TA52      |
| R105     | 0RD2200F609 | 220 OHM 1/6 W 5.00% TA52  |
| R107     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R108     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R109     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R110     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R110     | 0RS0102K607 | 10 OHM 2 W 5.00% TA62     |
| R1101    | 0RD4702F609 | 47K OHM 1/6 W 5% TA52     |
| R1102    | 0RD1501F609 | 1.5K OHM 1/6 W 5% TA52    |
| R1103    | 0RD3300F609 | 330 OHM 1/6 W 5.00% TA52  |
| R1104    | 0RD0102F609 | 10 OHM 1/6 W 5% TA52      |
| R111     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52      |
| R111     | 0RS0102K607 | 10 OHM 2 W 5.00% TA62     |
| R112     | 0RD1002F609 | 10K OHM 1/6 W 5% TA52     |
| R112     | 0RS0102K607 | 10 OHM 2 W 5.00% TA62     |
| R113     | 0RD0102F609 | 10 OHM 1/6 W 5% TA52      |
| R113     | 0RS0102K607 | 10 OHM 2 W 5.00% TA62     |
| R1130    | 0RKZVTA001K | 0.47M OHM 1/2 W 5% TA52   |
| R1151    | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R1152    | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R1153    | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R1154    | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R1155    | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R116     | 0RD1002F609 | 10K OHM 1/6 W 5% TA52     |
| R117     | 0RD2201F609 | 2.2K OHM 1/6 W 5.00% TA52 |
| R119     | 0RD0102F609 | 10 OHM 1/6 W 5% TA52      |
| R1204    | 0RD2403F609 | 240K OHM 1/6 W 5.00% TA52 |
| R1206    | 0RD0752F609 | 75 OHM 1/6 W 5.00% TA52   |
| R1208    | 0RD2403F609 | 240K OHM 1/6 W 5.00% TA52 |
| R1212    | 0RD0752F609 | 75 OHM 1/6 W 5.00% TA52   |
| R125     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R126     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R127     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R128     | 0RD0222F609 | 22 OHM 1/6 W 5.00% TA52   |
| R129     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R1292    | 0RD0752F609 | 75 OHM 1/6 W 5.00% TA52   |
| R130     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     |
| R131     | 0RD2200F609 | 220 OHM 1/6 W 5.00% TA52  |
| R132     | 0RD2200F609 | 220 OHM 1/6 W 5.00% TA52  |
| R133     | 0RD2400F609 | 240 OHM 1/6 W 5.00% TA52  |
| R134     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52      |
| R135     | 0RS1801H609 | 1.8K OHM 1/2 W 5.00% TA52 |
| R136     | 0RD1002F609 | 10K OHM 1/6 W 5% TA52     |
| R137     | 0RD1002F609 | 10K OHM 1/6 W 5% TA52     |
| R138     | 0RD0102F609 | 10 OHM 1/6 W 5% TA52      |
| R160     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52      |
| R161     | 0RD3002F609 | 30K OHM 1/6 W 5.00% TA52  |
| R162     | 0RD1002F609 | 10K OHM 1/6 W 5% TA52     |
| R163     | 0RD1003F609 | 100K OHM 1/6 W 5% TA52    |
| R164     | 0RD1801F609 | 1.8K OHM 1/6 W 5.00% TA52 |

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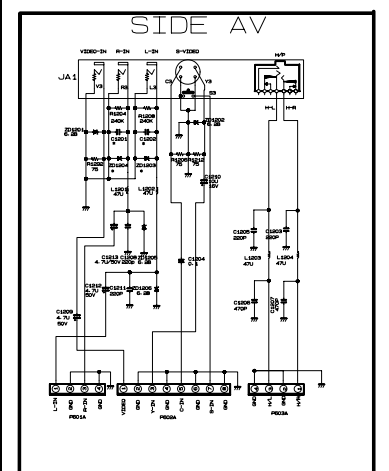
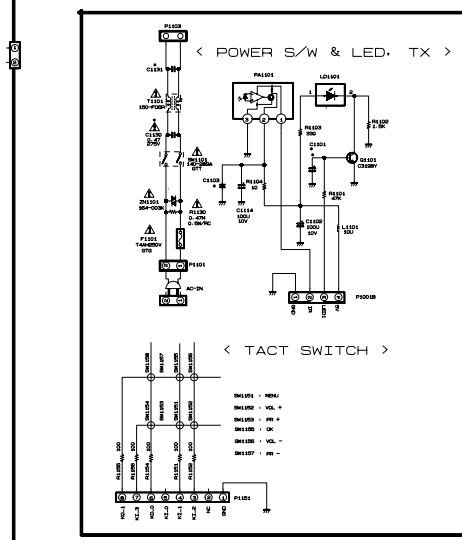
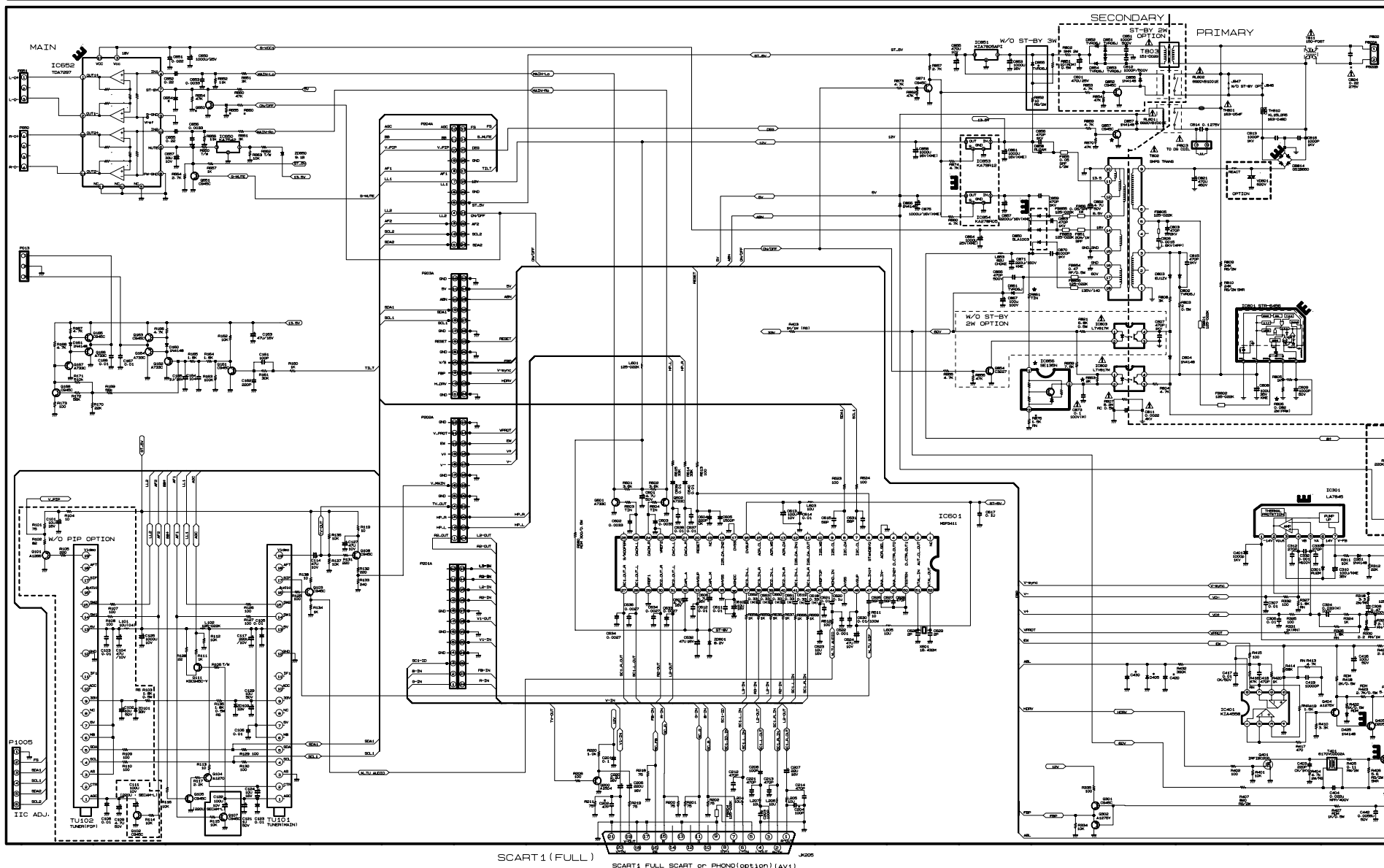
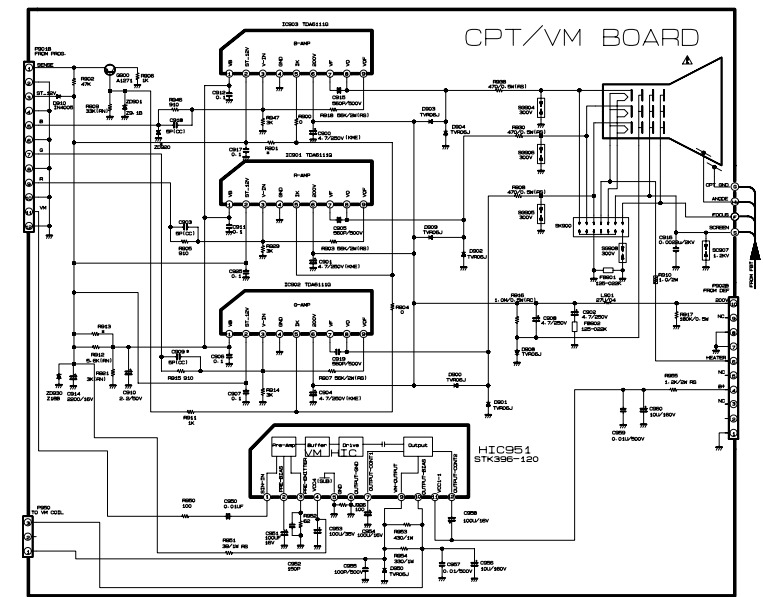
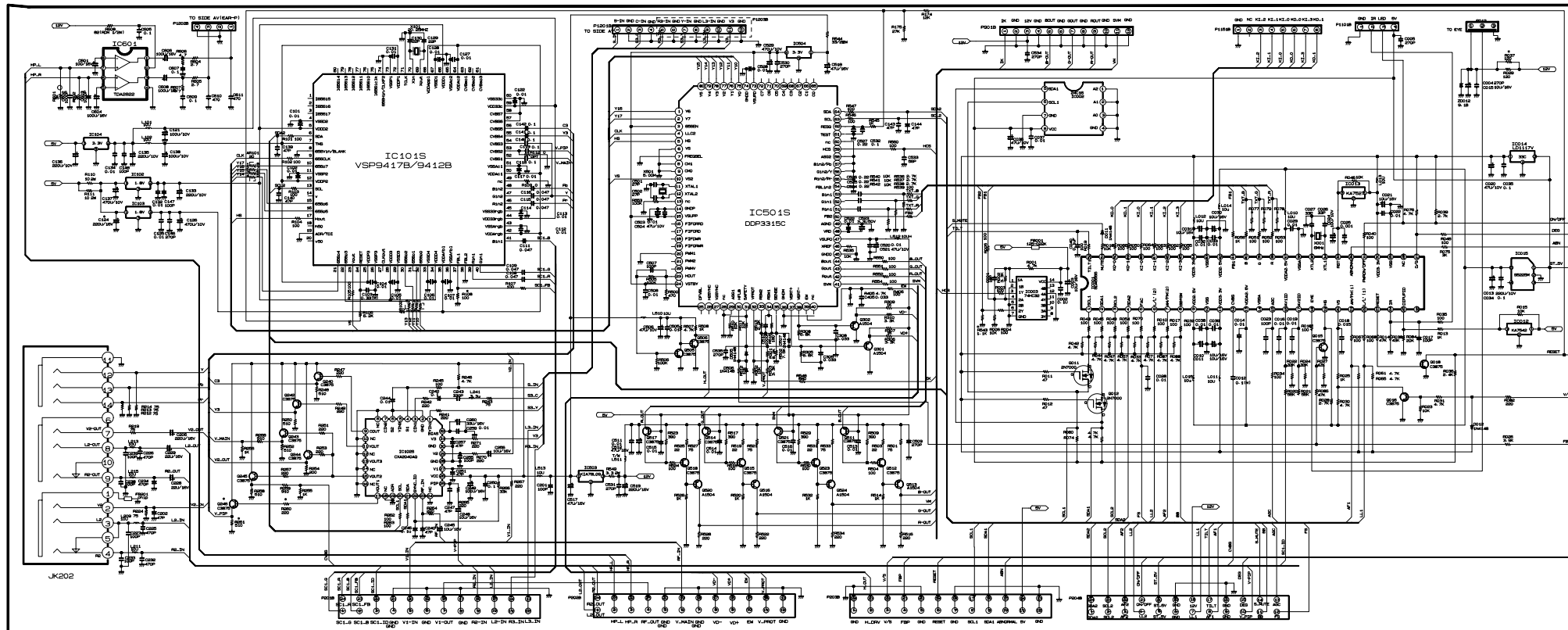
| LOCA. NO | PART NO     | DESCRIPTION               | LOCA. NO | PART NO     | DESCRIPTION                    |
|----------|-------------|---------------------------|----------|-------------|--------------------------------|
| R165     | 0RD1801F609 | 1.8K OHM 1/6 W 5.00% TA52 | R2990    | 0RD0222F609 | 22 OHM 1/6 W 5.00% TA52        |
| R166     | 0RD4701F609 | 4.7K OHM 1/6 W 5% TA52    | R311     | 0RD1002F609 | 10K OHM 1/6 W 5% TA52          |
| R167     | 0RD4701F609 | 4.7K OHM 1/6 W 5% TA52    | R312     | 0RD2202F609 | 22K OHM 1/6 W 5% TA52          |
| R168     | 0RD4701F609 | 4.7K OHM 1/6 W 5% TA52    | R313     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52           |
| R169     | 0RD5602F609 | 56K OHM 1/6 W 5% TA52     | R314     | 0RD3001F609 | 3K OHM 1/6 W 5.00% TA52        |
| R170     | 0RD2202F609 | 22K OHM 1/6 W 5% TA52     | R318     | 0RS0331K619 | 3.3 OHM 2 W 5% TR              |
| R171     | 0RD5103F609 | 510K OHM 1/6 W 5.00% TA52 | R324     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52           |
| R172     | 0RD5602F609 | 56K OHM 1/6 W 5% TA52     | R325     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52          |
| R173     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     | R326     | 0RN1201F409 | 1.2K OHM 1/6 W 1.00% TA52      |
| R200     | 0RD0752F609 | 75 OHM 1/6 W 5.00% TA52   | R327     | 0RN2701F409 | 2.7K OHM 1/6 W 1.00% TA52      |
| R201     | 0RD0752F609 | 75 OHM 1/6 W 5.00% TA52   | R328     | 0RS3300K607 | 330 OHM 2 W 5.00% TA62         |
| R202     | 0RD0752F609 | 75 OHM 1/6 W 5.00% TA52   | R329     | 0RN0301J607 | 3 OHM 1 W 5.00% TA62           |
| R203     | 0RD2400F609 | 240 OHM 1/6 W 5.00% TA52  | R330     | 0RN0301J607 | 3 OHM 1 W 5.00% TA62           |
| R203     | 0RD2403F609 | 240K OHM 1/6 W 5.00% TA52 | R331     | 0RN1001F409 | 1K OHM 1/6 W 1.00% TA52        |
| R204     | 0RD2400F609 | 240 OHM 1/6 W 5.00% TA52  | R332     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52          |
| R204     | 0RD2403F609 | 240K OHM 1/6 W 5.00% TA52 | R334     | 0RD1002F609 | 10K OHM 1/6 W 5% TA52          |
| R208     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     | R335     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52          |
| R211     | 0RD0752F609 | 75 OHM 1/6 W 5.00% TA52   | R401     | 0RD1002F609 | 10K OHM 1/6 W 5% TA52          |
| R218     | 0RD0752F609 | 75 OHM 1/6 W 5.00% TA52   | R403     | 0RS1001J607 | 1K OHM 1 W 5.00% TA62          |
| R219     | 0RD0752F609 | 75 OHM 1/6 W 5.00% TA52   | R404     | 0RS4701K619 | 4.7K OHM 2 W 5% TR             |
| R220     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52      | R405     | 180-A01B    | RW ROUND G 2W 0.11 K TA31(63)  |
| R2906    | 0RD1500F609 | 150 OHM 1/6 W 5.00% TA52  | R406     | 0RS0561K619 | 5.6 OHM 2 W 5% TR              |
| R2907    | 0RD1600F609 | 160 OHM 1/6 W 5.00% TA52  | R407     | 0RS1501K607 | 1.5K OHM 2 W 5.00% TA62        |
| R2908    | 0RD3001F609 | 3K OHM 1/6 W 5.00% TA52   | R410     | 0RD3301F609 | 3.3K OHM 1/6 W 5.00% TA52      |
| R2909    | 0RD1500F609 | 150 OHM 1/6 W 5.00% TA52  | R413     | 0RN4701F409 | 4.7K OHM 1/6 W 1.00% TA52      |
| R2910    | 0RD3001F609 | 3K OHM 1/6 W 5.00% TA52   | R414     | 0RD6802F609 | 68K OHM 1/6 W 5.00% TA52       |
| R2911    | 0RD5601F609 | 5.6K OHM 1/6 W 5% TA52    | R415     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52          |
| R2912    | 0RD3001F609 | 3K OHM 1/6 W 5.00% TA52   | R416     | 0RN4702F409 | 47K OHM 1/6 W 1.00% TA52       |
| R2921    | 0RD3000H609 | 300 OHM 1/2 W 5.00% TA52  | R417     | 0RD4700F609 | 470 OHM 1/6 W 0.05 TA52        |
| R2922    | 0RD3000H609 | 300 OHM 1/2 W 5.00% TA52  | R418     | 0RD2001A609 | 2K OHM 1/2 W(7.0) 5.00% TA52   |
| R2928    | 0RD0102F609 | 10 OHM 1/6 W 5% TA52      | R418     | 0RD2001A609 | 2K OHM 1/2 W(7.0) 5.00% TA52   |
| R2929    | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     | R419     | 0RN1501F409 | 1.5K OHM 1/6 W 1.00% TA52      |
| R2930    | 0RD0102F609 | 10 OHM 1/6 W 5% TA52      | R420     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52           |
| R2931    | 0RD1000F609 | 100 OHM 1/6 W 5% TA52     | R421     | 0RD0221F609 | 2.2 OHM 1/6 W 5.00% TA52       |
| R2932    | 0RD0822F609 | 82 OHM 1/6 W 5.00% TA52   | R422     | 0RD1001A609 | 1K OHM 1/2 W(7.0) 5.00% TA52   |
| R2933    | 0RD0822F609 | 82 OHM 1/6 W 5.00% TA52   | R423     | 0RD2701A609 | 2.7K OHM 1/2 W(7.0) 5.00% TA52 |
| R2934    | 0RF0102J607 | 10 OHM 1 W 5.00% TA62     | R424     | 0RS0561K607 | 5.6 OHM 2 W 5.00% TA62         |
| R2935    | 0RD1202H609 | 12K OHM 1/2 W 5.00% TA52  | R425     | 0RD2400A609 | 240 OHM 1/2 W(7.0) 5.00% TA52  |
| R2936    | 0RD2001H609 | 2K OHM 1/2 W 5.00% TA52   | R427     | 0RD1001A609 | 1K OHM 1/2 W(7.0) 5.00% TA52   |
| R2937    | 0RD5602H609 | 56K OHM 1/2 W 5.00% TA52  | R430     | 0RS1001H609 | 1K OHM 1/2 W 5.00% TA52        |
| R2938    | 0RD5602H609 | 56K OHM 1/2 W 5.00% TA52  | R431     | 0RS6802H609 | 68K OHM 1/2 W 5.00% TA52       |
| R2939    | 0RD1201H609 | 1.2K OHM 1/2 W 5.00% TA52 | R432     | 0RD3903F609 | 390K OHM 1/6 W 5.00% TA52      |
| R2940    | 0RD1501H609 | 1.5K OHM 1/2 W 5.00% TA52 | R434     | 0RS3901H609 | 3.9K OHM 1/2 W 5.00% TA52      |
| R2941    | 0RD1501H609 | 1.5K OHM 1/2 W 5.00% TA52 | R450     | 0RD0221A609 | 2.2 OHM 1/2 W(7.0) 5.00% TA52  |
| R2942    | 0RD0391H609 | 3.9 OHM 1/2 W 5.00% TA52  | R451     | 180-C02M    | 5.6K OHM 1/2 W 10% TA52        |
| R2943    | 0RD0562H609 | 56 OHM 1/2 W 5.00% TA52   | R452     | 0RS0101J607 | 1 OHM 1 W 5.00% TA62           |
| R2944    | 0RD0391H609 | 3.9 OHM 1/2 W 5.00% TA52  | R490     | 180-B01E    | RS RECT S 5W 15K J DOUBLE      |
| R2945    | 0RD0562H609 | 56 OHM 1/2 W 5.00% TA52   | R544     | 0RS0332K607 | 33 OHM 2 W 5.00% TA62          |
| R2946    | 0RS8200J607 | 820 OHM 1 W 5.00% TA62    | R549     | 0RS0331K607 | 3.3 OHM 2 W 5.00% TA62         |
| R2947    | 0RS8200J607 | 820 OHM 1 W 5.00% TA62    | R601     | 0RD3601F609 | 3.6K OHM 1/6 W 5.00% TA52      |
| R2955    | 0RD2202H609 | 22K OHM 1/2 W 5.00% TA52  | R602     | 0RD3601F609 | 3.6K OHM 1/6 W 5.00% TA52      |
| R2959    | 0RD5101F609 | 5.1K OHM 1/6 W 5.00% TA52 | R608     | 0RD0822A609 | 82 OHM 1/2 W(7.0) 5.00% TA52   |

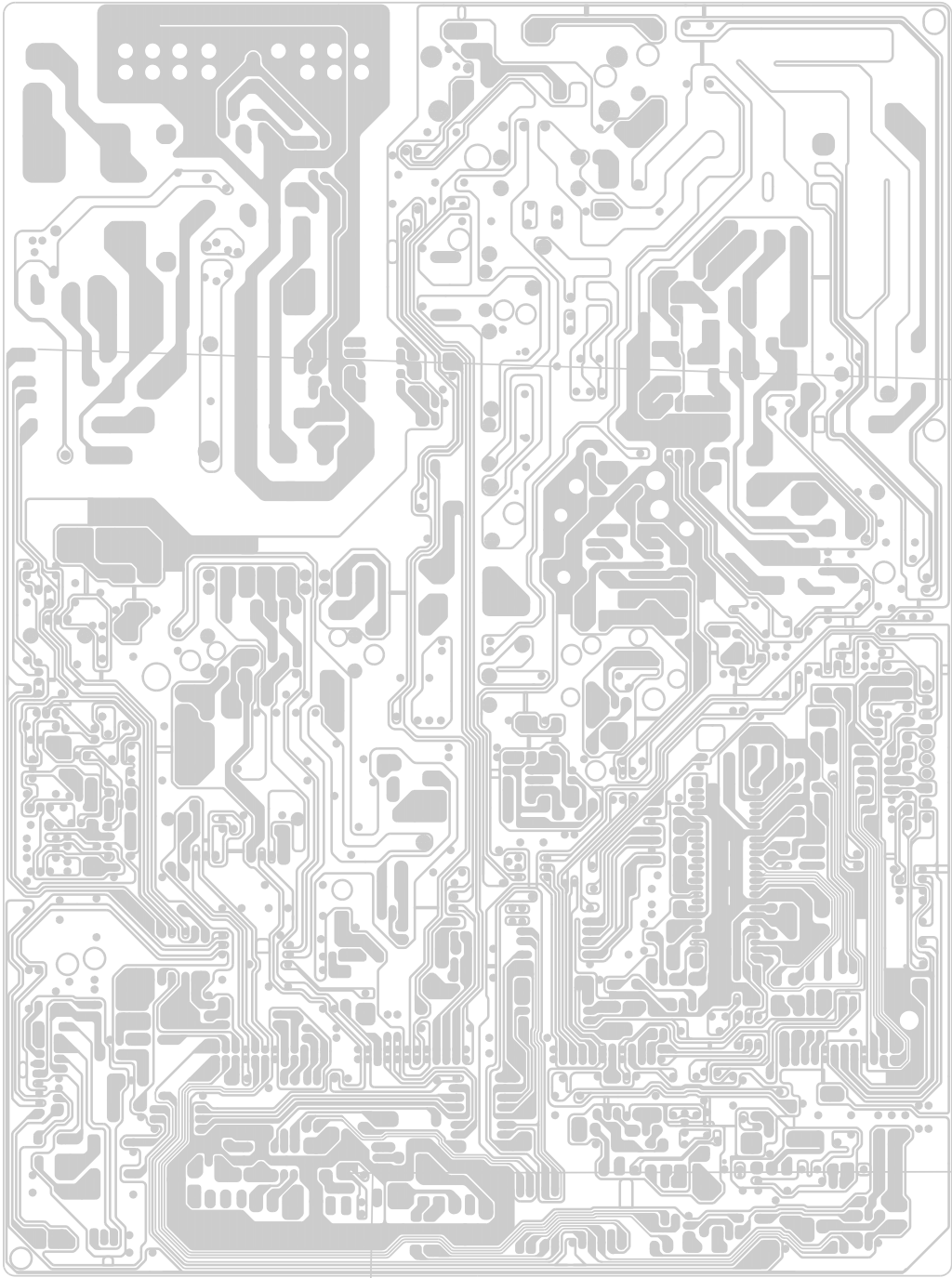
|  |                          |                       |
|--|--------------------------|-----------------------|
| For Capacitor & Resistors,<br>the characters at 2nd and 3rd<br>digit in the P/No. means as<br>follows; | CC, CX, CK, CN : Ceramic | RD : Carbon Film      |
|  | CQ : Polyester           | RS : Metal Oxide Film |
|  | CE : Electrolytic        | RN : Metal Film       |
|  |                          | RF : Fusible          |

| LOCA. NO | PART NO     | DESCRIPTION                    |
|----------|-------------|--------------------------------|
| R611     | 0RD0102F609 | 10 OHM 1/6 W 5% TA52           |
| R612     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52          |
| R613     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52          |
| R614     | 0RD3302F609 | 33K OHM 1/6 W 5% TA52          |
| R615     | 0RD3302F609 | 33K OHM 1/6 W 5% TA52          |
| R623     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52          |
| R624     | 0RD1000F609 | 100 OHM 1/6 W 5% TA52          |
| R636     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52           |
| R637     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52           |
| R651     | 0RD3001F609 | 3K OHM 1/6 W 5.00% TA52        |
| R652     | 0RD8201F609 | 8.2K OHM 1/6 W 5.00% TA52      |
| R654     | 0RD4702F609 | 47K OHM 1/6 W 5% TA52          |
| R656     | 0RD8201F609 | 8.2K OHM 1/6 W 5.00% TA52      |
| R657     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52           |
| R658     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52           |
| R659     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52           |
| R660     | 0RD4702F609 | 47K OHM 1/6 W 5% TA52          |
| R661     | 0RD3001F609 | 3K OHM 1/6 W 5.00% TA52        |
| R663     | 0RD1002F609 | 10K OHM 1/6 W 5% TA52          |
| R664     | 0RD2701F609 | 2.7K OHM 1/6 W 5% TA52         |
| R665     | 0RD2001A609 | 2K OHM 1/2 W(7.0) 5.00% TA52   |
| R668     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52           |
| R669     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52           |
| R680     | 0RD3000A609 | 300 OHM 1/2 W(7.0) 5.00% TA52  |
| R803     | 0RD0201A609 | 2 OHM 1/2 W(7.0) 5.00% TA52    |
| R804     | 0RD4701F609 | 4.7K OHM 1/6 W 5% TA52         |
| R805     | 0RD1001F609 | 1K OHM 1/6 W 5% TA52           |
| R806     | 180-A01Q    | 0.082 OHM 2W +/-10% PRW V-TYPE |
| R807     | 0RKZVTA001C | 8.2M OHM 1/2 W 5% TA52         |
| R808     | 0RD3001F609 | 3K OHM 1/6 W 5.00% TA52        |
| R809     | 0RS2402K607 | 24K OHM 2 W 5.00% TA62         |
| R810     | 0RS2402K619 | 24K OHM 2 W 5% TR              |
| R821     | 0RS6801H609 | 6.8K OHM 1/2 W 5.00% TA52      |
| R832     | 0RD1600F609 | 160 OHM 1/6 W 5.00% TA52       |
| R833     | 0RD2203A609 | 220K OHM 1/2 W(7.0) 5.00% TA52 |
| R852     | 0RS0102K607 | 10 OHM 2 W 5.00% TA62          |
| R855     | 0RD4701F609 | 4.7K OHM 1/6 W 5% TA52         |
| R856     | 0RD4702F609 | 47K OHM 1/6 W 5% TA52          |
| R857     | 0RD2701F609 | 2.7K OHM 1/6 W 5% TA52         |
| R859     | 0RD7501F609 | 7.5K OHM 1/6 W 5.00% TA52      |
| R860     | 0RD4701F609 | 4.7K OHM 1/6 W 5% TA52         |
| R862     | 0RD4702F609 | 47K OHM 1/6 W 5% TA52          |
| R863     | 0RD2001F609 | 2K OHM 1/6 W 5% TA52           |
| R864     | 0RF0161K607 | 1.6 OHM 2 W 5.00% TA62         |
| R865     | 0RF0161K607 | 1.6 OHM 2 W 5.00% TA62         |
| R866     | 0RS1002H609 | 10K OHM 1/2 W 5.00% TA52       |
| R867     | 0RD7502A609 | 75K OHM 1/2 W(7.0) 5.00% TA52  |
| R868     | 0RD1002F609 | 10K OHM 1/6 W 5% TA52          |
| R869     | 0RD4701F609 | 4.7K OHM 1/6 W 5% TA52         |
| R870     | 0RD4702F609 | 47K OHM 1/6 W 5% TA52          |
| R873     | 0RD4701F609 | 4.7K OHM 1/6 W 5% TA52         |
| R874     | 0RD4701F609 | 4.7K OHM 1/6 W 5% TA52         |

| LOCA. NO                    | PART NO     | DESCRIPTION                             |
|-----------------------------|-------------|---|
| R877                        | 0RD4702F609 | 47K OHM 1/6 W 5% TA52                   |
| R902                        | 0RD1002F609 | 10K OHM 1/6 W 5% TA52                   |
| R903                        | 0RS5602K607 | 56K OHM 2 W 5.00% TA62                  |
| R905                        | 0RD1001F609 | 1K OHM 1/6 W 5% TA52                    |
| R906                        | 0RD2200F609 | 220 OHM 1/6 W 5.00% TA52                |
| R907                        | 0RS5602K607 | 56K OHM 2 W 5.00% TA62                  |
| R908                        | 0RS4700H609 | 470 OHM 1/2 W 5.00% TA52                |
| R909                        | 0RN2201F409 | 2.2K OHM 1/6 W 1.00% TA52               |
| R910                        | 0RF0161K607 | 1.6 OHM 2 W 5.00% TA62                  |
| R912                        | 0RN3301F409 | 3.3K OHM 1/6 W 1.00% TA52               |
| R913                        | 0RN3301F409 | 3.3K OHM 1/6 W 1.00% TA52               |
| R914                        | 0RD2401F609 | 2.4K OHM 1/6 W 5.00% TA52               |
| R915                        | 0RD1001F609 | 1K OHM 1/6 W 5% TA52                    |
| R917                        | 0RD1803H609 | 180K OHM 1/2 W 5% TA52                  |
| R918                        | 0RS5602K607 | 56K OHM 2 W 5.00% TA62                  |
| R921                        | 0RN1001F409 | 1K OHM 1/6 W 1.00% TA52                 |
| R929                        | 0RD2401F609 | 2.4K OHM 1/6 W 5.00% TA52               |
| R930                        | 0RS4700H609 | 470 OHM 1/2 W 5.00% TA52                |
| R938                        | 0RS4700H609 | 470 OHM 1/2 W 5.00% TA52                |
| R946                        | 0RD1001F609 | 1K OHM 1/6 W 5% TA52                    |
| R947                        | 0RD2401F609 | 2.4K OHM 1/6 W 5.00% TA52               |
| <b>SWITCH</b>               |             |   |
| SW1101                      | 6600VM2002A | SDKEA3 ALPS IEC 250V 8A HORIZONTAL 480G |
| SW1151                      | 140-315A    | TACT SKHV17910B LG C&D 12V              |
| SW1152                      | 140-315A    | TACT SKHV17910B LG C&D 12V              |
| SW1153                      | 140-315A    | TACT SKHV17910B LG C&D 12V              |
| SW1154                      | 140-315A    | TACT SKHV17910B LG C&D 12V              |
| SW1155                      | 140-315A    | TACT SKHV17910B LG C&D 12V              |
| SW1156                      | 140-315A    | TACT SKHV17910B LG C&D 12V              |
| <b>SPARK GAP</b>            |             |   |
| SG904                       | 6918VAX002H | WSP-122N 1200V -100V,+300V AXIAL TP     |
| SG911                       | 6918VAX002D | WSP-301M 300V 20% AXIAL TYPE 5MM        |
| SG912                       | 6918VAX002D | WSP-301M 300V 20% AXIAL TYPE 5MM        |
| SG913                       | 6918VAX002D | WSP-301M 300V 20% AXIAL TYPE 5MM        |
| <b>FILTER &amp; CRYSTAL</b> |             |   |
| B100                        | 6210TCE001G | HH-1M3216-501 CERATEC 3216MM R/TP       |
| FB001                       | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| FB204                       | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| FB301                       | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| FB801                       | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| FB802                       | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| FB805                       | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| FB853                       | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| FB855                       | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| FB856                       | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| FB902                       | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| J121                        | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| J59                         | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |
| L102                        | 125-022K    | FERRITE AXIAL 62MM 1UH NY 3.5X6.0MM     |









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